

BLAST OFF to 4th Grade Math

3rd to 4th Grade Transition Math Workbook

ANSWER KEY

Thank you for downloading! This is the answer key to accompany the workbook **Blast off to 4th Grade Math**. We hope this will be a great resource for your child to reinforce 3rd grade math and build the skills needed for success in 4th grade.

If you have any further questions, please email us at hello@edventurelearning.com.

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For each number, write the digits in the correct columns in the place value chart.

	Ten thousands	Thousands	Hundreds	Tens	Ones
57,431	5	7	4	3	1

	Ten thousands	Thousands	Hundreds	Tens	Ones
82,047	8	2	0	4	7

	Ten thousands	Thousands	Hundreds	Tens	Ones
10,678	1	0	6	7	8

	Ten thousands	Thousands	Hundreds	Tens	Ones
77,810	7	7	8	1	0

	Ten thousands	Thousands	Hundreds	Tens	Ones
6,546	(0)	6	5	4	6

	Ten thousands	Thousands	Hundreds	Tens	Ones
31,005	3	1	0	0	5

Write each number in expanded form.

$$\textcircled{1} 25,987 = \underline{20,000} + \underline{5,000} + \underline{900} + \underline{80} + \underline{7}$$

$$\textcircled{2} 16,721 = \underline{10,000} + \underline{6,000} + \underline{700} + \underline{20} + \underline{1}$$

$$\textcircled{3} 32,945 = \underline{30,000} + \underline{2,000} + \underline{900} + \underline{40} + \underline{5}$$

$$\textcircled{4} 45,263 = \underline{40,000} + \underline{5,000} + \underline{200} + \underline{60} + \underline{3}$$

$$\textcircled{5} 19,819 = \underline{10,000} + \underline{9,000} + \underline{800} + \underline{10} + \underline{9}$$

Change each expanded form into a number in standard form.

$$\textcircled{6} 30,000 + 1,000 + 700 + 80 + 9 = \underline{31,789}$$

$$\textcircled{7} 80,000 + 2,000 + 100 + 70 + 2 = \underline{82,172}$$

$$\textcircled{8} 5,000 + 900 + 30 + 8 = \underline{5,938}$$

$$\textcircled{9} 40,000 + 500 + 90 + 3 = \underline{40,593}$$

$$\textcircled{10} 50,000 + 4,000 + 600 + 10 + 5 = \underline{54,615}$$

Write each number in standard form.

$$\textcircled{1} \text{ One thousand three hundred twenty-six } \underline{1,326}$$

$$\textcircled{2} \text{ Six thousand two hundred ninety-seven } \underline{6,297}$$

$$\textcircled{3} \text{ Nine hundred eighteen } \underline{918}$$

$$\textcircled{4} \text{ Fifty-two thousand four hundred eleven } \underline{52,411}$$

$$\textcircled{5} \text{ Eighty-one thousand thirty-five } \underline{81,035}$$

Write out the name of each number.

$$\textcircled{6} 8,457 \text{ } \underline{\text{Eight thousand four hundred fifty-seven}}$$

$$\textcircled{7} 21,860 \text{ } \underline{\text{Twenty-one thousand eight hundred sixty}}$$

$$\textcircled{8} 13,145 \text{ } \underline{\text{Thirteen thousand one hundred forty-five}}$$

$$\textcircled{9} 5,092 \text{ } \underline{\text{Five thousand ninety-two}}$$

$$\textcircled{10} 48,917 \text{ } \underline{\text{Forty-eight thousand nine hundred seventeen}}$$

Complete the diagram about each number.

NAME	
Eight thousand two hundred seventy-one	
PLACE VALUES	<u>8</u> thousands <u>7</u> tens <u>2</u> hundreds <u>1</u> ones
EXPANDED FORM	<u>8,000</u> + <u>200</u> + <u>70</u> + <u>1</u>

NAME	
Five thousand one hundred forty-eight	
PLACE VALUES	<u>5</u> thousands <u>4</u> tens <u>1</u> hundreds <u>8</u> ones
EXPANDED FORM	<u>5,000</u> + <u>100</u> + <u>40</u> + <u>8</u>

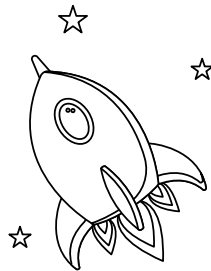
NAME	
One thousand six hundred ninety-three	
PLACE VALUES	<u>1</u> thousands <u>9</u> tens <u>6</u> hundreds <u>3</u> ones
EXPANDED FORM	<u>1,000</u> + <u>600</u> + <u>90</u> + <u>3</u>

Write the value of the underlined digit in each number.

- ① 56,091 90 ② 34,087 7
- ③ 78,362 8,000 ④ 49,513 10
- ⑤ 20,915 5 ⑥ 68,761 60,000
- ⑦ 12,456 400 ⑧ 81,560 60
- ⑨ 91,238 200 ⑩ 93,108 3,000

Circle the number in each pair in which the digit 5 has a **greater** value.

- ⑪ 52,487 35,290
- ⑫ 15,921 18,579
- ⑬ 12,345 87,654
- ⑭ 10,592 45,012
- ⑮ 98,572 65,081



Fill in the blanks with the correct numbers.

- ① 5 tens = 50 ones
- ② 3 hundreds = 30 tens
- ③ 2 thousands = 20 hundreds
- ④ 8 ten thousands = 80 thousands
- ⑤ 9 hundreds = 900 ones
- ⑥ 500 ones = 50 tens
- ⑦ 20 hundreds = 2 thousands
- ⑧ 1 thousand = 100 tens
- ⑨ 30 thousands = 3 ten thousands
- ⑩ 7 thousands = 7,000 ones

Fill in the correct bubble to answer each question.

What does the 1 represent in the number 51,247?

- 10,000 1,000 100

What does the 9 represent in the number 38,492?

- 9 ones 9 tens 9 hundreds

What does the 8 represent in the number 19,845?

- 8,000 80 800

Which digit in is the ten thousands place in the number 13,974?

- 1 3 7

Which digit is in the hundreds place in the number 75,209?

- 5 7 2

Write the four-digit number that answers each riddle.

My tens and ones digits add up to my hundreds digit.
My thousands digit is one less than my tens digit.
My ones digit is 5 and my thousands digit is 1.
What number am I?

1,725

My thousands digit and ones digit are the same.
The value of my hundreds digit is 200.
My last two digits are 46.
What number am I?

6,246

My thousands digit is 5 and my tens digit is 1.
My tens and ones digits add up to my thousands digit.
My hundreds digit is one less than my tens digit.
What number am I?

5,014

All of my digits add up to 9.
My hundreds digit and tens digit are the same.
My thousands digit is 4 and my ones digit is 1.
What number am I?

4,221

My largest digit is in the ones place.
I am an even number.
Three of my digits are 7.
What number am I?

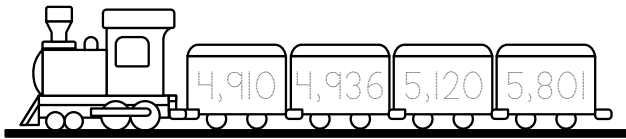
7,778

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Ordering and Comparing

Write each set of numbers in the train cars in order from least to greatest.

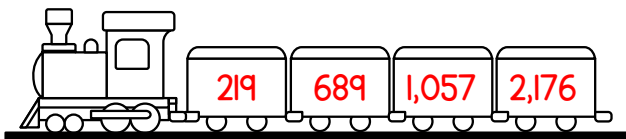
EX 5,120 5,801 4,910 4,936



① 18,026 20,451 17,389 9,678



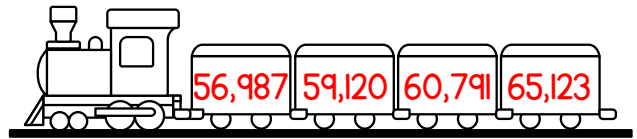
② 219 1,057 689 2,176



Ordering and Comparing

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③ 65,123 56,987 59,120 60,791



④ 9,052 8,173 10,328 9,287



⑤ 17,140 17,410 17,389 17,399



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Ordering and Comparing

Compare each pair of numbers using one of these symbols:

> greater than

< less than

= equal to

1,023 > 1,017

7,981 > 7,962

5,170 > 4,910

523 < 524

7,120 = 7,120

2,750 > 2,573

2,718 < 2,728

21,417 > 19,456

12,920 < 13,081

952 = 952

11,259 > 11,257

87,461 > 78,461

51,942 < 52,318

55,555 > 7,777

Ordering and Comparing

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Answer each word problem.

Lucas scored lower on the math test than Miguel. David scored higher on the math test than Miguel. Cameron scored lower on the test than Lucas. Whose score was the highest?

David

Mount Whitney is 14,505 feet tall. Mount Fairweather is 15,325 feet tall. Mount Rainier is 14,411 feet tall. Mount Hubbard is 14,951 feet tall. List the names of the mountains from tallest to shortest.

Tallest: FairweatherHubbardWhitneyShortest: Rainier

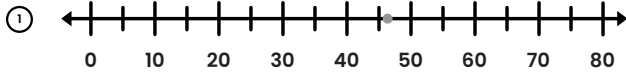
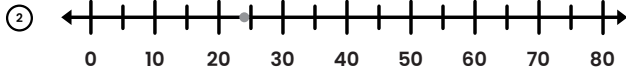
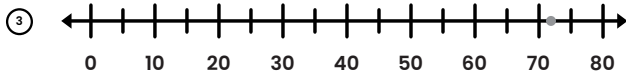
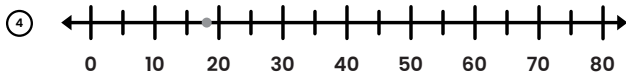
Ava, Brianna, Chelsea, and Dina ran a race. Dina finished before Ava. Chelsea came in 2nd place. Ava finished before Brianna. In what order did the runners finish the race?

1st place: Dina2nd place: Chelsea3rd place: Ava4th place: Brianna

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Rounding

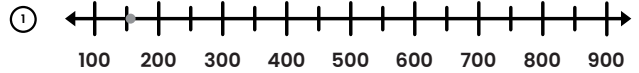
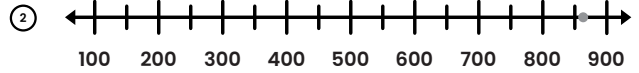
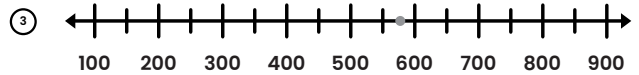
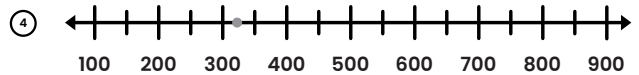
Use the number line to help you round each number to the nearest ten.

46 rounded to the nearest ten is 5024 rounded to the nearest ten is 2072 rounded to the nearest ten is 7018 rounded to the nearest ten is 20

Rounding

19

Use the number line to help you round each number to the nearest hundred.

154 rounded to the nearest hundred is 200867 rounded to the nearest hundred is 900579 rounded to the nearest hundred is 600320 rounded to the nearest hundred is 300

20

Rounding

Fill in the correct bubble to answer each question.

What is 287 rounded to the nearest ten?

- 280 290 300

What is 1,451 rounded to the nearest hundred?

- 1,400 1,450 1,500

Which of these numbers would round to 480 as the nearest ten?

- 486 478 474

Which of these numbers would round to 900 as the nearest ten?

- 897 909 923

Which of these numbers would round to 500 as the nearest hundred?

- 412 549 570

Rounding

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Round each number to the nearest ten and the nearest hundred.

	Nearest Ten	Nearest Hundred
605	610	600

	Nearest Ten	Nearest Hundred
2,319	2,320	2,300

	Nearest Ten	Nearest Hundred
987	990	1,000

	Nearest Ten	Nearest Hundred
723	720	700

	Nearest Ten	Nearest Hundred
1,481	1,480	1,500

	Nearest Ten	Nearest Hundred
564	560	600

	Nearest Ten	Nearest Hundred
175	180	200

	Nearest Ten	Nearest Hundred
212	210	200

	Nearest Ten	Nearest Hundred
7,916	7,920	7,900

	Nearest Ten	Nearest Hundred
338	340	300

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Addition and Subtraction

Complete the addition table.

+	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	10
2	3	4	5	6	7	8	9	10	11
3	4	5	6	7	8	9	10	11	12
4	5	6	7	8	9	10	11	12	13
5	6	7	8	9	10	11	12	13	14
6	7	8	9	10	11	12	13	14	15
7	8	9	10	11	12	13	14	15	16
8	9	10	11	12	13	14	15	16	17
9	10	11	12	13	14	15	16	17	18

Which of these will always give you an even sum?
(select all that apply)

- even + even
 even + odd
 odd + odd

Which of these will always give you an odd sum?
(select all that apply)

- even + even
 even + odd
 odd + odd

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Addition and Subtraction

For each set of three numbers given, write four related addition and subtraction facts.

①

10	25	15
----	----	----

$$\underline{10} + \underline{15} = \underline{25}$$

$$\underline{15} + \underline{10} = \underline{25}$$

$$\underline{25} - \underline{15} = \underline{10}$$

$$\underline{25} - \underline{10} = \underline{15}$$

②

37	13	24
----	----	----

$$\underline{13} + \underline{24} = \underline{37}$$

$$\underline{24} + \underline{13} = \underline{37}$$

$$\underline{37} - \underline{13} = \underline{24}$$

$$\underline{37} - \underline{24} = \underline{13}$$

Addition and Subtraction

25

Fill in the correct bubble to answer each question.

Which of these expressions is equal to $6 + 14$?

- $14 - 6$
 $14 + 6$
 $20 - 6$

Which of these expressions is NOT equal to $15 + 22$?

- $30 + 7$
 $20 + 17$
 $35 + 7$

Which of these expressions is NOT equal to $42 + 17 + 6$?

- $42 + 23$
 $60 + 4$
 $59 + 6$

Which of these expressions is equal to $83 - 38$?

- $80 - 35$
 $45 + 38$
 $85 - 35$

Which of these expressions is NOT equal to $25 + 37$?

- $20 + 30 + 12$
 $25 + 30 + 7$
 $30 + 20 + 7$

27

Addition and Subtraction

Find each sum or difference. Regroup if needed.

$$\begin{array}{r} 45 \\ + 33 \\ \hline 78 \end{array}$$

$$\begin{array}{r} 52 \\ + 19 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 24 \\ + 61 \\ \hline 85 \end{array}$$

$$\begin{array}{r} 76 \\ + 87 \\ \hline 163 \end{array}$$

$$\begin{array}{r} 88 \\ + 10 \\ \hline 98 \end{array}$$

$$\begin{array}{r} 62 \\ + 18 \\ \hline 80 \end{array}$$

$$\begin{array}{r} 29 \\ - 17 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 76 \\ - 43 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 24 \\ - 15 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 82 \\ - 41 \\ \hline 41 \end{array}$$

$$\begin{array}{r} 88 \\ - 32 \\ \hline 38 \end{array}$$

$$\begin{array}{r} 62 \\ - 28 \\ \hline 37 \end{array}$$

$$\begin{array}{r} 21 \\ + 38 \\ \hline 59 \end{array}$$

$$\begin{array}{r} 74 \\ - 23 \\ \hline 51 \end{array}$$

$$\begin{array}{r} 57 \\ + 14 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 35 \\ - 12 \\ \hline 23 \end{array}$$

$$\begin{array}{r} 18 \\ + 22 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 78 \\ - 56 \\ \hline 22 \end{array}$$

$$\begin{array}{r} 80 \\ - 60 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 45 \\ + 52 \\ \hline 97 \end{array}$$

$$\begin{array}{r} 57 \\ - 18 \\ \hline 33 \end{array}$$

$$\begin{array}{r} 64 \\ + 33 \\ \hline 97 \end{array}$$

$$\begin{array}{r} 94 \\ - 52 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 46 \\ + 49 \\ \hline 95 \end{array}$$

$$\begin{array}{r} 74 \\ + 14 \\ \hline 88 \end{array}$$

$$\begin{array}{r} 67 \\ + 23 \\ \hline 90 \end{array}$$

$$\begin{array}{r} 92 \\ - 46 \\ \hline 46 \end{array}$$

$$\begin{array}{r} 28 \\ + 37 \\ \hline 65 \end{array}$$

$$\begin{array}{r} 85 \\ - 53 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 39 \\ - 18 \\ \hline 21 \end{array}$$

Estimate each sum or difference by rounding to the nearest hundred.

- EX Estimate: $422 \rightarrow 400$
 $+ 287 \rightarrow + 300$
 $\underline{\hspace{1cm}}$
 700
- ① Estimate: $593 \rightarrow 600$
 $+ 634 \rightarrow + 600$
 $\underline{\hspace{1cm}}$
 $1,200$
- ② Estimate: $805 \rightarrow 800$
 $- 142 \rightarrow - 100$
 $\underline{\hspace{1cm}}$
 700
- ③ Estimate: $375 \rightarrow 400$
 $+ 726 \rightarrow + 700$
 $\underline{\hspace{1cm}}$
 $1,100$
- ④ Estimate: $910 \rightarrow 900$
 $- 133 \rightarrow - 100$
 $\underline{\hspace{1cm}}$
 800
- ⑤ Estimate: $689 \rightarrow 700$
 $+ 92 \rightarrow + 100$
 $\underline{\hspace{1cm}}$
 800
- ⑥ Estimate: $876 \rightarrow 900$
 $- 204 \rightarrow - 200$
 $\underline{\hspace{1cm}}$
 700
- ⑦ Estimate: $359 \rightarrow 400$
 $+ 442 \rightarrow + 400$
 $\underline{\hspace{1cm}}$
 800

Estimate. Then find each sum or difference.

- EX Estimate: $1,000$
 $341 \quad 300$
 $+ 672 \quad + 700$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $1,013 \quad 1,000$
- ① Estimate: 900
 $109 \quad 100$
 $+ 829 \quad + 800$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $938 \quad 900$
- ② Estimate: $1,000$
 $278 \quad 300$
 $+ 722 \quad + 700$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $1,000 \quad 1,000$
- ③ Estimate: 900
 $492 \quad 500$
 $+ 384 \quad + 400$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $876 \quad 900$
- ④ Estimate: 400
 $926 \quad 900$
 $- 504 \quad - 500$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $422 \quad 400$
- ⑤ Estimate: 500
 $764 \quad 800$
 $- 259 \quad - 300$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $505 \quad 500$
- ⑥ Estimate: 200
 $619 \quad 600$
 $- 386 \quad - 400$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $233 \quad 200$
- ⑦ Estimate: 400
 $838 \quad 800$
 $- 427 \quad - 400$
 $\underline{\hspace{1cm}} \quad \underline{\hspace{1cm}}$
 $411 \quad 400$

Fill in the missing number to make each equation true.

- EX $25 = 13 + \underline{12}$
- ① $302 + \underline{18} = 320$
- ② $697 - \underline{235} = 462$
- ③ $160 = \underline{120} + 40$
- ④ $\underline{799} - 287 = 512$
- ⑤ $427 + \underline{176} = 603$
- ⑥ $978 - \underline{461} = 517$
- ⑦ $481 = \underline{211} + 270$
- ⑧ $\underline{191} - 85 = 106$

Fill in the correct bubble to answer each question.

What is the sum of 319 and 562?

- 871 879 881

Which of these does NOT equal 427?

- $210 + 217$ $311 + 116$ $370 + 47$

What is the difference between 645 and 268?

- 913 377 423

Which of these does NOT equal 361?

- $845 - 524$ $484 - 123$ $812 - 451$

Which of these expressions has the greatest value?

- $615 - 157$ $234 + 376$ $781 - 460$

Add or subtract to solve each word problem.

The fourth grade teachers at a school are Mrs. Green, Mr. Miller, Ms. Jones, and Mrs. Smith. There are 25 students in Mrs. Green's class, 21 in Mr. Miller's class, 23 in Ms. Jones' class, and 20 in Mrs. Smith's class. How many fourth graders are there all together?

$$\begin{array}{r} 25 \\ 21 \\ 23 \\ +20 \\ \hline 89 \end{array}$$

89 fourth graders

For a reading challenge, Jessica has read 326 pages so far. Nico has read 298 pages. How many more pages has Jessica read than Nico?

$$\begin{array}{r} 2116 \\ 326 \\ -298 \\ \hline 28 \end{array}$$

28 pages

A football team scores 14 points in the first quarter of a game, 0 points in the second quarter, 7 points in the third quarter, and 6 points in the fourth quarter. What is their final score in the game?

$$\begin{array}{r} 1 \\ 14 \\ 0 \\ 7 \\ +6 \\ \hline 27 \end{array}$$

27 points

The first book in a series has 276 pages, the second book has 312 pages, and the third has 352 pages. How many pages are there in the entire book series?

$$\begin{array}{r} 11 \\ 276 \\ 312 \\ +352 \\ \hline 940 \end{array}$$

940 pages

Morgan and Danielle live in different cities and are meeting up in Atlanta. Morgan lives 457 miles from Atlanta, and Danielle lives 384 miles from Atlanta. How much farther does Morgan have to travel than Danielle?

$$\begin{array}{r} 35 \\ 457 \\ -384 \\ \hline 73 \end{array}$$

73 miles

Fiona and Gretchen are selling cookies for a fundraiser. Fiona has sold 145 boxes of cookies, and Gretchen has sold 219 boxes of cookies. How many more boxes has Gretchen sold than Fiona?

$$\begin{array}{r} 110 \\ 219 \\ -145 \\ \hline 74 \end{array}$$

74 boxes of cookies

Fill in the blanks to write an addition equation and a multiplication equation to describe each picture.



$$\begin{array}{l} 6 + 6 + 6 + 6 = 24 \\ 4 \times 6 = 24 \end{array}$$



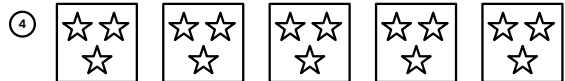
$$\begin{array}{l} 5 + 5 + 5 + 5 = 20 \\ 4 \times 5 = 20 \end{array}$$



$$\begin{array}{l} 4 + 4 + 4 = 12 \\ 3 \times 4 = 12 \end{array}$$



$$\begin{array}{l} 8 + 8 + 8 = 24 \\ 3 \times 8 = 24 \end{array}$$



$$\begin{array}{l} 3 + 3 + 3 + 3 + 3 = 15 \\ 5 \times 3 = 15 \end{array}$$



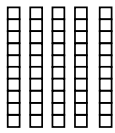
$$\begin{array}{l} 9 + 9 = 18 \\ 2 \times 9 = 18 \end{array}$$

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Multiplication

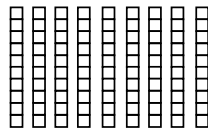
Complete the multiplication equation to represent each set of tens.

EX



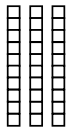
$$\underline{5} \times 10 = \underline{50}$$

①



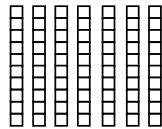
$$\underline{9} \times 10 = \underline{90}$$

②



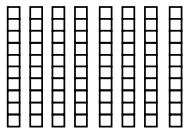
$$\underline{3} \times 10 = \underline{30}$$

③



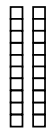
$$\underline{7} \times 10 = \underline{70}$$

④



$$\underline{8} \times 10 = \underline{80}$$

⑤



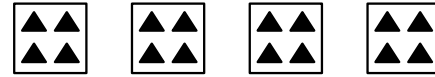
$$\underline{2} \times 10 = \underline{20}$$

Multiplication

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Select the multiplication expression that best represents each picture.


 3×8 8×2 4×2

 3×6 5×3 3×3

 2×2 4×2 4×4

 3×6 6×2 3×7

 2×6 7×7 7×2

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Multiplication

Draw a picture to represent each multiplication expression, then solve.

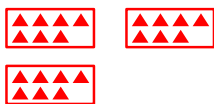
$$4 \times 10 = \underline{40}$$



$$2 \times 5 = \underline{10}$$



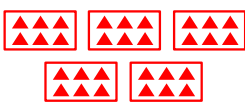
$$3 \times 7 = \underline{21}$$



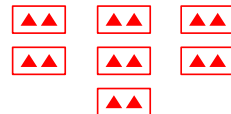
$$3 \times 2 = \underline{6}$$



$$5 \times 6 = \underline{30}$$



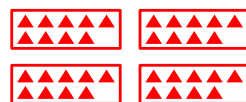
$$7 \times 2 = \underline{14}$$



$$8 \times 3 = \underline{24}$$



$$4 \times 9 = \underline{36}$$



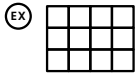
Multiplication

39

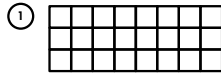
Fill in the correct bubbles to answer each question. Some questions have more than one correct answer.

Which of these expressions is equal to 4×3 ?
 3×4 $4 + 4 + 4$ $3 + 3 + 3$
Which of these expressions is equal to 2×8 ?
 $8 + 2$ 8×2 $8 + 8$
Which of these is equal to 5×3 ?
 2 8 15
Which of these is equal to 2×6 ?
 8 12 18
Which of these is equal to 4×2 ?
 2 6 8

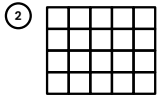
Write a multiplication equation to describe each array.



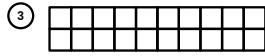
$$3 \times 4 = 12$$



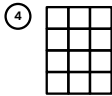
$$3 \times 8 = 24$$



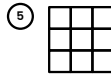
$$4 \times 5 = 20$$



$$2 \times 10 = 20$$



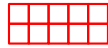
$$4 \times 3 = 12$$



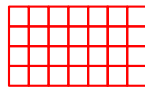
$$3 \times 3 = 9$$

Draw an array to show each multiplication equation, then solve.

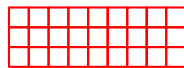
⑥ $2 \times 5 = 10$



⑦ $4 \times 7 = 28$

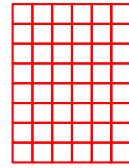


⑧ $3 \times 9 = 27$



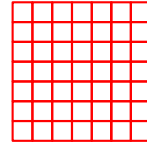
Draw an array to help you solve each word problem.

A sheet of stickers has 8 rows with 6 stickers in each row. How many stickers are on the sheet all together?



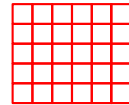
48 stickers

A game board has a grid of squares that are in 7 rows of 7 squares each. How many squares are on the game board in all?



49 squares

The desks in a classroom are arranged in 5 rows of 6 desks each. How many desks are in the classroom?



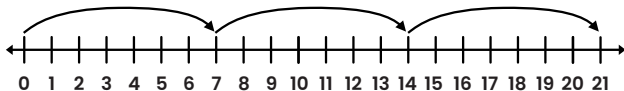
30 desks

Complete the multiplication equation shown by each number line.

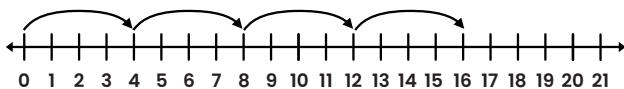
EX $8 \times 2 = 16$



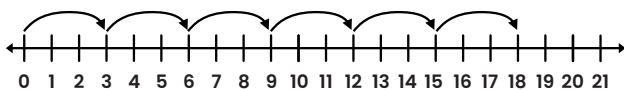
① $3 \times 7 = 21$



② $4 \times 4 = 16$

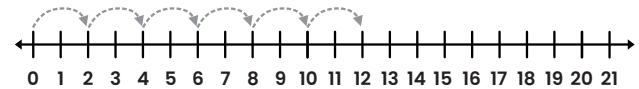


③ $6 \times 3 = 18$

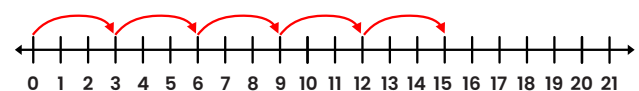


Show each multiplication equation on the number line.

EX $6 \times 2 = 12$



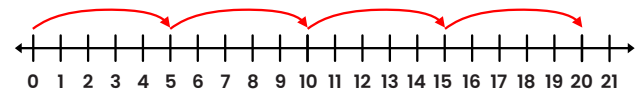
① $5 \times 3 = 15$



② $2 \times 9 = 18$



③ $4 \times 5 = 20$



Multiplying by 0: Find each product.

$$\textcircled{1} 4 \times 0 = \underline{0} \quad \textcircled{2} 5 \times 0 = \underline{0} \quad \textcircled{3} 0 \times 8 = \underline{0}$$

$$\textcircled{4} 0 \times 7 = \underline{0} \quad \textcircled{5} 12 \times 0 = \underline{0} \quad \textcircled{6} 11 \times 0 = \underline{0}$$

$$\textcircled{7} 0 \times 9 = \underline{0} \quad \textcircled{8} 10 \times 0 = \underline{0} \quad \textcircled{9} 6 \times 0 = \underline{0}$$

$\textcircled{10}$ Write a rule for multiplying any number by 0. Any number multiplied by 0 equals 0.

Multiplying by 1: Find each product.

$$\textcircled{11} 9 \times 1 = \underline{9} \quad \textcircled{12} 3 \times 1 = \underline{3} \quad \textcircled{13} 1 \times 7 = \underline{7}$$

$$\textcircled{14} 1 \times 8 = \underline{8} \quad \textcircled{15} 4 \times 1 = \underline{4} \quad \textcircled{16} 6 \times 1 = \underline{6}$$

$$\textcircled{17} 1 \times 5 = \underline{5} \quad \textcircled{18} 10 \times 1 = \underline{10} \quad \textcircled{19} 11 \times 1 = \underline{11}$$

$\textcircled{20}$ Write a rule for multiplying any number by 1. Any number multiplied by 1 equals that number.

Multiplying by 2: Use doubles facts to multiply by 2.

$$\textcircled{1} 2 \times 2 = \underline{4} \quad \textcircled{2} 6 \times 2 = \underline{12} \quad \textcircled{3} 2 \times 3 = \underline{6}$$

$$\textcircled{4} 5 \times 2 = \underline{10} \quad \textcircled{5} 2 \times 7 = \underline{14} \quad \textcircled{6} 1 \times 2 = \underline{2}$$

$$\textcircled{7} 2 \times 4 = \underline{8} \quad \textcircled{8} 8 \times 2 = \underline{16} \quad \textcircled{9} 2 \times 9 = \underline{18}$$

Multiplying by 4: Use the of strategy doubling a twos fact to multiply by 4.

$$\begin{array}{l} \text{EX) } 4 \times 6 = ? \\ 2 \times 6 = \underline{12} \\ \underline{12} + \underline{12} = \underline{24} \\ 4 \times 6 = \underline{24} \end{array} \quad \begin{array}{l} \textcircled{10} 4 \times 7 = ? \\ 2 \times 7 = \underline{14} \\ \underline{14} + \underline{14} = \underline{28} \\ 4 \times 7 = \underline{28} \end{array}$$

$$\begin{array}{l} \textcircled{11} 4 \times 4 = ? \\ 2 \times 4 = \underline{8} \\ \underline{8} + \underline{8} = \underline{16} \\ 4 \times 4 = \underline{16} \end{array} \quad \begin{array}{l} \textcircled{12} 4 \times 8 = ? \\ 2 \times 8 = \underline{16} \\ \underline{16} + \underline{16} = \underline{32} \\ 4 \times 8 = \underline{32} \end{array}$$

Multiplying by 3: Find each product.

$$\textcircled{1} 3 \times 2 = \underline{6} \quad \textcircled{2} 6 \times 3 = \underline{18} \quad \textcircled{3} 3 \times 3 = \underline{9}$$

$$\textcircled{4} 5 \times 3 = \underline{15} \quad \textcircled{5} 3 \times 7 = \underline{21} \quad \textcircled{6} 1 \times 3 = \underline{3}$$

$$\textcircled{7} 3 \times 4 = \underline{12} \quad \textcircled{8} 8 \times 3 = \underline{24} \quad \textcircled{9} 3 \times 9 = \underline{27}$$

Multiplying by 6: Use the of strategy doubling a threes fact to multiply by 6.

$$\begin{array}{l} \text{EX) } 6 \times 8 = ? \\ 3 \times 8 = \underline{24} \\ \underline{24} + \underline{24} = \underline{48} \\ 6 \times 8 = \underline{48} \end{array} \quad \begin{array}{l} \textcircled{10} 6 \times 7 = ? \\ 3 \times 7 = \underline{21} \\ \underline{21} + \underline{21} = \underline{42} \\ 6 \times 7 = \underline{42} \end{array}$$

$$\begin{array}{l} \textcircled{11} 6 \times 8 = ? \\ 3 \times 8 = \underline{24} \\ \underline{24} + \underline{24} = \underline{48} \\ 6 \times 8 = \underline{48} \end{array} \quad \begin{array}{l} \textcircled{12} 6 \times 9 = ? \\ 3 \times 9 = \underline{27} \\ \underline{27} + \underline{27} = \underline{54} \\ 6 \times 9 = \underline{54} \end{array}$$

Multiplying by 5: Count by fives to find each product.

$$\textcircled{1} 5 \times 2 = \underline{10} \quad \textcircled{2} 6 \times 5 = \underline{30} \quad \textcircled{3} 5 \times 3 = \underline{15}$$

$$\textcircled{4} 5 \times 5 = \underline{25} \quad \textcircled{5} 5 \times 7 = \underline{35} \quad \textcircled{6} 1 \times 5 = \underline{5}$$

$$\textcircled{7} 4 \times 5 = \underline{20} \quad \textcircled{8} 8 \times 5 = \underline{40} \quad \textcircled{9} 5 \times 9 = \underline{45}$$

Multiplying by 7: Break apart the array to show how the distributive property can be used to multiply by 7.

$$\begin{array}{l} \text{EX) } 6 \times 7 = ? \\ 6 \times (2 + 5) = ? \\ (6 \times 2) + (6 \times 5) = ? \end{array} \quad \begin{array}{l} \textcircled{10} 6 \times 7 = ? \\ 6 \times 2 = \underline{12} \\ 6 \times 5 = \underline{30} \\ \underline{12} + \underline{30} = \underline{42} \\ 6 \times 7 = \underline{42} \end{array}$$

$$\begin{array}{l} \textcircled{11} 8 \times 7 = ? \\ 8 \times 7 = 8 \times (2 + 5) \\ 8 \times 7 = (8 \times 2) + (8 \times 5) \\ 8 \times 7 = \underline{16} + \underline{40} \\ 8 \times 7 = \underline{56} \end{array} \quad \begin{array}{l} \textcircled{12} 9 \times 7 = ? \\ 9 \times 7 = 9 \times (2 + 5) \\ 9 \times 7 = (9 \times 2) + (9 \times 5) \\ 9 \times 7 = \underline{18} + \underline{45} \\ 9 \times 7 = \underline{63} \end{array}$$

Multiplying by 8: Fill in the blanks to show how the distributive property can be used to multiply by 8.

EX) $6 \times 8 = ?$

$$6 \times 8 = \underline{6} \times (4 + 4)$$

$$6 \times 8 = (6 \times 4) + (6 \times \underline{4})$$

$$6 \times 8 = \underline{24} + \underline{24}$$

$$6 \times 8 = \underline{48}$$

① $5 \times 8 = ?$

$$5 \times 8 = 5 \times (3 + \underline{5})$$

$$5 \times 8 = (5 \times 3) + (5 \times \underline{5})$$

$$5 \times 8 = \underline{15} + \underline{25}$$

$$5 \times 8 = \underline{40}$$

② $7 \times 8 = ?$

$$7 \times 8 = \underline{7} \times (3 + 5)$$

$$7 \times 8 = (7 \times 3) + (7 \times \underline{5})$$

$$7 \times 8 = \underline{21} + \underline{35}$$

$$7 \times 8 = \underline{56}$$

③ $9 \times 8 = ?$

$$9 \times 8 = 9 \times (4 + \underline{4})$$

$$9 \times 8 = (9 \times 4) + (9 \times \underline{4})$$

$$9 \times 8 = \underline{36} + \underline{36}$$

$$9 \times 8 = \underline{72}$$

Use the associative property to multiply by 8.

EX) $8 \times 4 = ?$

$$8 \times 4 = \underline{4} \times 8$$

$$\underline{4} \times 8 = \underline{32}$$

$$\text{So, } 8 \times 4 = \underline{32}$$

④ $8 \times 3 = ?$

$$8 \times 3 = \underline{3} \times 8$$

$$\underline{3} \times 8 = \underline{24}$$

$$\text{So, } 8 \times 3 = \underline{24}$$

⑤ $8 \times 2 = ?$

$$8 \times 2 = \underline{2} \times 8$$

$$\underline{2} \times 8 = \underline{16}$$

$$\text{So, } 8 \times 2 = \underline{16}$$

⑥ $8 \times 5 = ?$

$$8 \times 5 = \underline{5} \times 8$$

$$\underline{5} \times 8 = \underline{40}$$

$$\text{So, } 8 \times 5 = \underline{40}$$

Multiplying by 9: Fill in the multiples of 9 in the multiplication table.

x	1	2	3	4	5	6	7	8	9
1									9
2									18
3									27
4									36
5									45
6									54
7									63
8									72
9	9	18	27	36	45	54	63	72	81

Describe a pattern you see in the multiples of 9. (Answers may vary.)

The tens digit and ones digit in each multiple of 9 add up to 9.

Multiplying by 10: Find each product.

① $10 \times 1 = \underline{10}$

② $4 \times 10 = \underline{40}$

③ $10 \times 7 = \underline{70}$

④ $5 \times 10 = \underline{50}$

⑤ $10 \times 3 = \underline{30}$

⑥ $8 \times 10 = \underline{80}$

⑦ $10 \times 6 = \underline{60}$

⑧ $9 \times 10 = \underline{90}$

⑨ $2 \times 10 = \underline{20}$

⑩ $10 \times 10 = \underline{100}$

⑪ $10 \times 12 = \underline{120}$

⑫ $24 \times 10 = \underline{240}$

⑬ $32 \times 10 = \underline{320}$

⑭ $10 \times 61 = \underline{610}$

⑮ $10 \times 80 = \underline{800}$

⑯ $55 \times 10 = \underline{550}$

⑰ $17 \times 10 = \underline{170}$

⑱ $10 \times 74 = \underline{740}$

⑲ $10 \times 28 = \underline{280}$

⑳ Write a rule for multiplying any number by 10. **Add a zero onto the end of the number.**

Find each product.

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 4 \\ \times 6 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 6 \\ \times 6 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 6 \\ \times 7 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 2 \\ \times 9 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 5 \\ \times 9 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 7 \\ \times 9 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 8 \\ \times 6 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 3 \\ \times 9 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 4 \\ \times 8 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 1 \\ \times 9 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 8 \\ \times 8 \\ \hline 64 \end{array}$$

$$\begin{array}{r} 6 \\ \times 9 \\ \hline 54 \end{array}$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 2 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 4 \\ \times 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 8 \\ \times 9 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline 49 \end{array}$$

$$\begin{array}{r} 2 \\ \times 6 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 0 \\ \times 6 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 1 \\ \times 7 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 4 \\ \times 7 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 9 \\ \times 9 \\ \hline 81 \end{array}$$

$$\begin{array}{r} 8 \\ \times 7 \\ \hline 56 \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array}$$

Complete the multiplication table.

×	1	2	3	4	5	6	7	8	9	100
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
100	10	20	30	40	50	60	70	80	90	100

Which of these will always give you an even product?
(select all that apply)

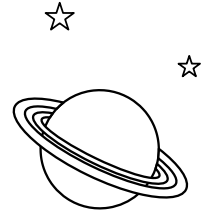
- even × even even × odd odd × odd

Which of these will always give you an odd product?
(select all that apply)

- even × even even × odd odd × odd

Fill the the blanks with the correct number to complete each sentence.

- ① 16 is 2 times as much as 8 .
 ② 12 is 4 times as much as 3.
 ③ 18 is 2 times as much as 9.
 ④ 24 is 4 times as much as 6 .
 ⑤ 15 is 3 times as much as 5.
 ⑥ 28 is 4 times as much as 7.
 ⑦ 56 is 7 times as much as 8 .
 ⑧ 48 is 6 times as much as 8.



Write an equation to represent each sentence.

- ⑨ 72 is 8 times as much as 9. $\underline{8} \times \underline{9} = \underline{72}$
 ⑩ 30 is 10 times as much as 3. $\underline{10} \times \underline{3} = \underline{30}$
 ⑪ 14 is 7 times as much as 2. $\underline{7} \times \underline{2} = \underline{14}$
 ⑫ 35 is 5 times as much as 7. $\underline{5} \times \underline{7} = \underline{35}$
 ⑬ 27 is 9 times as much as 3. $\underline{9} \times \underline{3} = \underline{27}$
 ⑭ 36 is 4 times as much as 9. $\underline{4} \times \underline{9} = \underline{36}$

Circle whether each equation is true or false.

- ① TRUE or **FALSE?** ② **TRUE** or FALSE?
 $6 \times 3 = 24$ $3 \times 7 = 21$
- ③ TRUE or **FALSE?** ④ TRUE or **FALSE?**
 $8 \times 5 = 45$ $7 \times 4 = 27$
- ⑤ **TRUE** or FALSE? ⑥ **TRUE** or FALSE?
 $9 \times 8 = 72$ $8 \times 8 = 64$

Fill in the missing number that would make each equation true.

- ⑦ $9 \times 3 = \underline{27}$ ⑧ $5 \times \underline{8} = 40$
 ⑨ $3 \times \underline{10} = 30$ ⑩ $\underline{8} \times 6 = 48$
 ⑪ $4 \times 9 = \underline{36}$ ⑫ $\underline{0} \times 4 = 0$
 ⑬ $9 \times \underline{9} = 81$ ⑭ $\underline{8} \times 7 = 56$
 ⑮ $2 \times 8 = \underline{16}$ ⑯ $\underline{1} \times 28 = 28$

Use multiplication to solve each word problem.

- ① Mr. Franklin gives his students a weekly spelling test. There are 10 words on each week's spelling test. How many words will the students have been tested on at the end of 8 weeks?
 $\underline{10} \times \underline{8} = \underline{80}$ words
- ② Lola brings 4 packages of cupcakes to school to share with her class. There are 6 cupcakes in each package. How many cupcakes does Lola bring?
 $\underline{4} \times \underline{6} = \underline{24}$ cupcakes
- ③ A baseball game lasts 9 innings unless the game is tied. If none of the games were tied, how many total innings would be played in 8 baseball games?
 $\underline{9} \times \underline{8} = \underline{72}$ innings
- ④ Ellen has 8 place settings of silverware. Each place setting contains a fork, a spoon, and a knife. How many pieces of silverware does Ellen have in all?
 $\underline{8} \times \underline{3} = \underline{24}$ pieces of silverware
- ⑤ Each of the 3 bedrooms in Rosa's house has one window. If Rosa wants to hang 2 curtains on every bedroom window, how many will she need?
 $\underline{3} \times \underline{2} = \underline{6}$ curtains

Fill in the blanks to make each equation true.

- ① $7 \times 8 = \underline{8} \times 7$
- ② $6 \times 9 = (6 \times 5) + (6 \times \underline{4})$
- ③ $3 \times (5 \times 6) = (3 \times \underline{5}) \times 6$
- ④ $8 \times 6 = 8 \times 2 \times \underline{3}$
- ⑤ $2 \times 7 \times 4 = 7 \times \underline{4} \times 2$
- ⑥ $5 \times 7 = (\underline{5} \times 2) + (5 \times 5)$
- ⑦ $(4 \times 2) \times 9 = 4 \times (\underline{2} \times 9)$
- ⑧ $7 \times 9 = 7 \times 3 \times \underline{3}$
- ⑨ $3 \times 4 \times 9 = 4 \times 9 \times \underline{3}$
- ⑩ $3 \times 8 = (3 \times 2) + (3 \times \underline{6})$

Fill in the correct bubble to answer each question.

Which of these is equal to 7×6 ?

- 6×7 $7 \times 3 \times 3$ $4 + (3 \times 6)$

Which of these is equal to 8×3 ?

- $4 \times 4 \times 3$ $3 + 8$ $(4 \times 3) + (4 \times 3)$

Which of these is equal to $2 \times (3 \times 4)$?

- 2×7 $(2 \times 3) \times 4$ $4 \times (2 + 3)$

Which of these is equal to $5 \times 3 \times 2$?

- 5×5 5×6 8×2

Which of these is equal to $4 \times 5 \times 6$?

- $5 \times 6 \times 4$ 9×6 $4 \times (5 + 6)$

Write all of the factor pairs that multiply to the product shown in each box.

12

1×12

2×6

3×4

4×3

6×2

12×1

6

1×6

2×3

3×2

6×1

8

1×8

2×4

4×2

8×1

16

1×16

2×8

4×4

8×2

16×1

24

1×24

2×12

3×8

4×6

6×4

8×3

12×2

24×1

7

1×7

7×1

Circle whether each equation is true or false.

- ① **TRUE** or FALSE? $8 \times 3 = 4 \times 6$
- ② TRUE or **FALSE**? $2 \times 7 = 3 \times 5$
- ③ TRUE or **FALSE**? $8 \times 3 = 9 \times 2$
- ④ TRUE or **FALSE**? $7 \times 3 = 4 \times 5$
- ⑤ **TRUE** or FALSE? $9 \times 4 = 6 \times 6$
- ⑥ **TRUE** or FALSE? $1 \times 27 = 9 \times 3$

Fill in any numbers that would make each equation true. *Answers may vary*

- ⑦ $4 \times 3 = \underline{6} \times \underline{2}$
- ⑧ $7 \times 2 = \underline{14} \times \underline{1}$
- ⑨ $3 \times 5 = \underline{5} \times \underline{3}$
- ⑩ $3 \times 6 = \underline{2} \times \underline{9}$
- ⑪ $4 \times 5 = \underline{10} \times \underline{2}$
- ⑫ $6 \times 4 = \underline{8} \times \underline{3}$

Multiples of 10: Find each product.

EX $3 \times 80 = 3 \times \underline{8}$ tens
 $3 \times 80 = \underline{24}$ tens
 $3 \times 80 = \underline{240}$

① $4 \times 50 = 4 \times \underline{5}$ tens
 $4 \times 50 = \underline{20}$ tens
 $4 \times 50 = \underline{200}$

② $7 \times 90 = 7 \times \underline{9}$ tens
 $7 \times 90 = \underline{63}$ tens
 $7 \times 90 = \underline{630}$

③ $5 \times 60 = 5 \times \underline{6}$ tens
 $5 \times 60 = \underline{30}$ tens
 $5 \times 60 = \underline{300}$

④ $8 \times 40 = 8 \times \underline{4}$ tens
 $8 \times 40 = \underline{32}$ tens
 $8 \times 40 = \underline{320}$

⑤ $9 \times 20 = 9 \times \underline{2}$ tens
 $9 \times 20 = \underline{18}$ tens
 $9 \times 20 = \underline{180}$

⑥ $2 \times 70 = \underline{140}$

⑦ $6 \times 40 = \underline{240}$

⑧ $3 \times 90 = \underline{270}$

⑨ $4 \times 30 = \underline{120}$

⑩ Write a rule for multiplying a 1-digit number by a multiple of 10.

Multiply the 1-digit number by the tens digit of the other number, then put a zero on the end.

Use multiplication to solve each word problem.

① There are 8 students on a STEM Club team. They each plan to buy matching sweatshirts that cost \$20. What will be the total cost of the team's sweatshirts?

$\underline{8} \times \underline{20} = \underline{160}$ dollars

② Maple Elementary School includes kindergarten through fifth grade. If there are 90 students in each grade, how many students attend the school?

$\underline{6} \times \underline{90} = \underline{540}$ students

③ Pencils come in boxes of 40 pencils each. How many pencils are in 7 boxes?

$\underline{40} \times \underline{7} = \underline{280}$ pencils

④ Amanda practices playing the flute for 30 minutes a day, 5 days a week. How many minutes does she spend practicing each week?

$\underline{30} \times \underline{5} = \underline{150}$ minutes

⑤ Joe's goal is to read 80 pages a week. If he meets his goal, how many pages will he have read at the end of 6 weeks?

$\underline{80} \times \underline{6} = \underline{480}$ pages

Fill in the blanks to describe each picture.

EX



There are 18 stars divided into 3 equal groups.

There are 6 stars in each group.

So, $18 \div 3 = \underline{6}$.

①



There are 24 stars divided into 6 equal groups.

There are 4 stars in each group.

So, $24 \div 6 = \underline{4}$.

②



There are 15 stars divided into 3 equal groups.

There are 5 stars in each group.

So, $15 \div 3 = \underline{5}$.

③



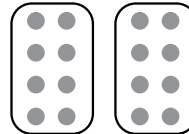
There are 12 stars divided into 4 equal groups.

There are 3 stars in each group.

So, $12 \div 4 = \underline{3}$.

Fill in the blanks to describe each picture.

EX



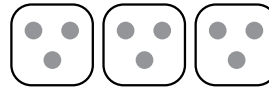
There are 16 dots.

They are divided into 2 equal groups.

There are 8 dots in each group.

So, $\underline{16} \div \underline{2} = \underline{8}$.

①



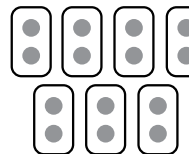
There are 9 dots.

They are divided into 3 equal groups.

There are 3 dots in each group.

So, $\underline{9} \div \underline{3} = \underline{3}$.

②



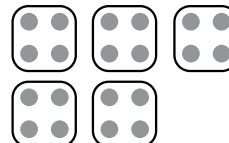
There are 14 dots.

They are divided into 7 equal groups.

There are 2 dots in each group.

So, $\underline{14} \div \underline{7} = \underline{2}$.

③



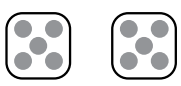
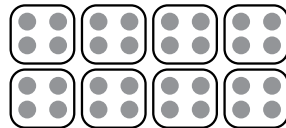

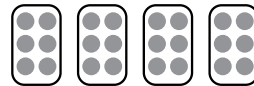

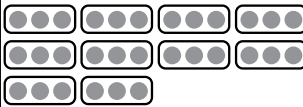
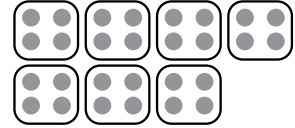
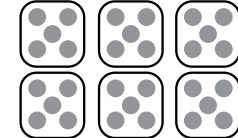
There are 20 dots.

They are divided into 5 equal groups.


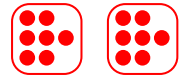

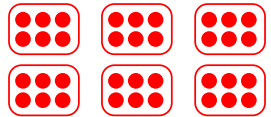
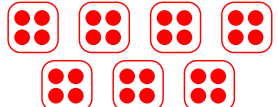

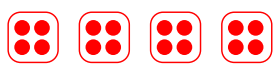
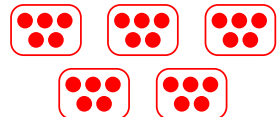
There are 4 dots in each group.

So, $\underline{20} \div \underline{5} = \underline{4}$.

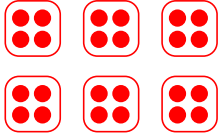
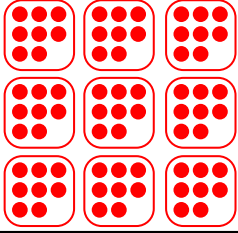
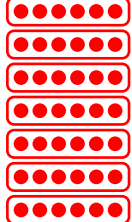
Write a division equation to describe each picture.

 $10 \div 2 = 5$	 $32 \div 8 = 4$
 $27 \div 3 = 9$	 $24 \div 4 = 6$
 $21 \div 3 = 7$	 $30 \div 10 = 3$
 $28 \div 7 = 4$	 $30 \div 6 = 5$

Draw a picture to represent each division equation, then solve.

$6 \div 3 = 2$ 	$14 \div 7 = 2$ 
$24 \div 3 = 8$ 	$36 \div 6 = 6$ 
$28 \div 7 = 4$ 	$12 \div 2 = 6$ 
$16 \div 4 = 4$ 	$25 \div 5 = 5$ 

Draw equal groups to help you solve each division word problem.

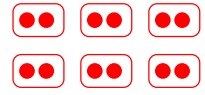
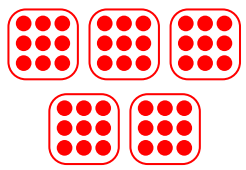
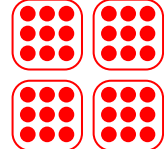
<p>A class of 24 students splits up into 6 equal groups for an activity. How many students are in each group?</p>	
<p>Mary is making bracelets. She needs 8 beads for each bracelet. If the beads come in packs of 72, how many bracelets can she make with one pack?</p>	
<p>Glenn plants 42 carrot seeds in 7 equal rows in his garden. How many carrot seeds are in each row?</p>	

4 students

9 bracelets

6 carrot seeds

Draw equal groups to represent each word problem. Write a division equation and solve.

<p>A pizza is cut into 12 slices. If 6 people share it equally, how many slices will each person get?</p>	
<p>If 5 friends equally share 45 marbles, how many will each one get?</p>	
<p>Alex uses 36 croutons on 4 salads. How many croutons does he put on each salad?</p>	

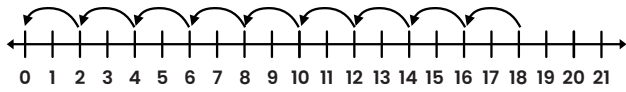
$12 \div 6 = 2$ slices

$45 \div 5 = 9$ marbles

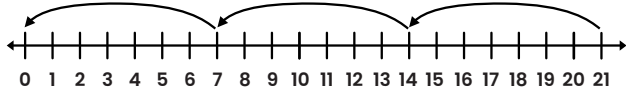
$36 \div 4 = 9$ croutons

Complete the division equation shown by each number line.

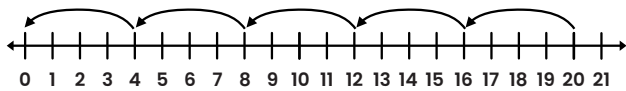
EX $18 \div 2 = 9$



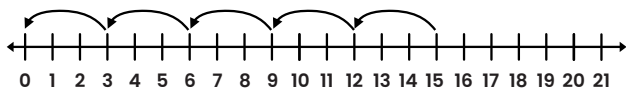
① $21 \div 7 = 3$



② $20 \div 4 = 5$



③ $15 \div 3 = 5$

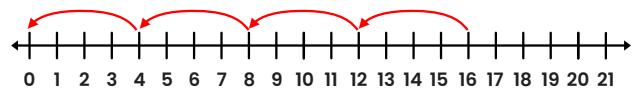


Show each division equation on the number line.

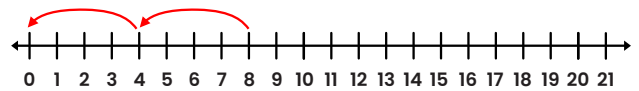
EX $10 \div 2 = 5$



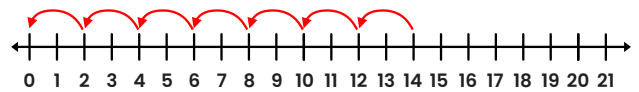
① $16 \div 4 = 4$



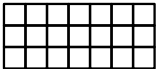
② $8 \div 4 = 2$

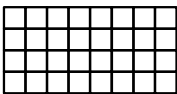


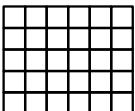
③ $14 \div 2 = 7$

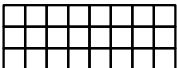


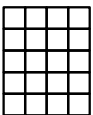
Fill in the blanks to describe each array.

EX  There are 21 squares in 3 equal rows.
There are 7 squares in each row.
So, $21 \div 3 = 7$.

①  There are 32 squares in 4 equal rows.
There are 8 squares in each row.
So, $32 \div 4 = 8$.

②  There are 30 squares in 5 equal rows.
There are 6 squares in each row.
So, $30 \div 5 = 6$.

③  There are 24 squares in 3 equal rows.
There are 8 squares in each row.
So, $24 \div 3 = 8$.

④  There are 20 squares in 5 equal rows.
There are 4 squares in each row.
So, $20 \div 5 = 4$.

Complete the multiplication equation by writing the missing factor. Then, use it to divide.

EX $7 \times 8 = 56$
 $56 \div 7 = 8$

① $5 \times 7 = 35$
 $35 \div 5 = 7$

② $3 \times 9 = 27$
 $27 \div 9 = 3$

③ $2 \times 7 = 14$
 $14 \div 7 = 2$

④ $8 \times 8 = 64$
 $64 \div 8 = 8$

⑤ $6 \times 5 = 30$
 $30 \div 6 = 5$

⑥ $9 \times 2 = 18$
 $18 \div 2 = 9$

⑦ $8 \times 3 = 24$
 $24 \div 3 = 8$

⑧ $4 \times 9 = 36$
 $36 \div 4 = 9$

⑨ $2 \times 8 = 16$
 $16 \div 2 = 8$

⑩ $2 \times 3 = 6$
 $6 \div 3 = 2$

⑪ $5 \times 5 = 25$
 $25 \div 5 = 5$

⑫ $7 \times 3 = 21$
 $21 \div 7 = 3$

⑬ $9 \times 8 = 72$
 $72 \div 9 = 8$

Dividing with 0: Find each quotient.

① $0 \div 4 = \underline{0}$ ② $0 \div 5 = \underline{0}$ ③ $0 \div 8 = \underline{0}$

④ $0 \div 7 = \underline{0}$ ⑤ $0 \div 9 = \underline{0}$ ⑥ $0 \div 3 = \underline{0}$

⑦ Write a rule for dividing 0 by any other number. **Zero divided by any other number equals 0.**

⑧ Does dividing by 0 result in the same answer? Why or why not?
No. You can't divide by 0 because you can't split something into 0 groups.

Dividing by 1: Find each quotient.

⑨ $9 \div 1 = \underline{9}$ ⑩ $3 \div 1 = \underline{3}$ ⑪ $7 \div 1 = \underline{7}$

⑫ $8 \div 1 = \underline{8}$ ⑬ $4 \div 1 = \underline{4}$ ⑭ $6 \div 1 = \underline{6}$

⑮ Write a rule for dividing any number by 1. **Any number divided by 1 equals that number.**

⑯ Draw a picture to show why this is true. (Answers may vary)



Dividing a Number by Itself: Find each quotient.

① $2 \div 2 = \underline{1}$ ② $5 \div 5 = \underline{1}$ ③ $7 \div 7 = \underline{1}$

④ $1 \div 1 = \underline{1}$ ⑤ $6 \div 6 = \underline{1}$ ⑥ $9 \div 9 = \underline{1}$

⑦ Write a rule for dividing any number greater than 0 by itself.
Any number greater than zero divided by itself equals 1.

⑧ Draw a picture to show why this is true. (Answers may vary)



Dividing by 2: Find each quotient.

⑨ $10 \div 2 = \underline{5}$ ⑩ $6 \div 2 = \underline{3}$ ⑪ $12 \div 2 = \underline{6}$

⑫ $16 \div 2 = \underline{8}$ ⑬ $14 \div 2 = \underline{7}$ ⑭ $2 \div 2 = \underline{1}$

⑮ $8 \div 2 = \underline{4}$ ⑯ $18 \div 2 = \underline{9}$ ⑰ $4 \div 2 = \underline{2}$

Dividing by 3: Find each quotient.

① $3 \div 3 = \underline{1}$ ② $9 \div 3 = \underline{3}$ ③ $15 \div 3 = \underline{5}$

④ $24 \div 3 = \underline{8}$ ⑤ $27 \div 3 = \underline{9}$ ⑥ $18 \div 3 = \underline{6}$

⑦ $21 \div 3 = \underline{7}$ ⑧ $12 \div 3 = \underline{4}$ ⑨ $6 \div 3 = \underline{2}$

Dividing by 4: Find each quotient.

⑩ $36 \div 4 = \underline{9}$ ⑪ $32 \div 4 = \underline{8}$ ⑫ $12 \div 4 = \underline{3}$

⑬ $20 \div 4 = \underline{5}$ ⑭ $24 \div 4 = \underline{6}$ ⑮ $8 \div 4 = \underline{2}$

⑯ $28 \div 4 = \underline{7}$ ⑰ $16 \div 4 = \underline{4}$ ⑱ $4 \div 4 = \underline{1}$

Dividing by 5: Find each quotient.

⑲ $20 \div 5 = \underline{4}$ ⑳ $30 \div 5 = \underline{6}$ ㉑ $5 \div 5 = \underline{1}$

㉒ $25 \div 5 = \underline{5}$ ㉓ $35 \div 5 = \underline{7}$ ㉔ $15 \div 5 = \underline{3}$

㉕ $40 \div 5 = \underline{8}$ ㉖ $45 \div 5 = \underline{9}$ ㉗ $10 \div 5 = \underline{2}$

Dividing by 6: Find each quotient.

① $54 \div 6 = \underline{9}$ ② $48 \div 6 = \underline{8}$ ③ $12 \div 6 = \underline{2}$

④ $24 \div 6 = \underline{4}$ ⑤ $36 \div 6 = \underline{6}$ ⑥ $18 \div 6 = \underline{3}$

⑦ $30 \div 6 = \underline{5}$ ⑧ $42 \div 6 = \underline{7}$ ⑨ $6 \div 6 = \underline{1}$

Dividing by 7: Find each quotient.

⑩ $35 \div 7 = \underline{5}$ ⑪ $42 \div 7 = \underline{6}$ ⑫ $7 \div 7 = \underline{1}$

⑬ $28 \div 7 = \underline{4}$ ⑭ $49 \div 7 = \underline{7}$ ⑮ $21 \div 7 = \underline{3}$

⑯ $56 \div 7 = \underline{8}$ ⑰ $63 \div 7 = \underline{9}$ ⑱ $14 \div 7 = \underline{2}$

Dividing by 8: Find each quotient.

⑲ $24 \div 8 = \underline{3}$ ⑳ $56 \div 8 = \underline{7}$ ㉑ $16 \div 8 = \underline{2}$

㉒ $48 \div 8 = \underline{6}$ ㉓ $32 \div 8 = \underline{4}$ ㉔ $8 \div 8 = \underline{1}$

㉕ $64 \div 8 = \underline{8}$ ㉖ $40 \div 8 = \underline{5}$ ㉗ $72 \div 8 = \underline{9}$

Dividing by 9: Find each quotient.

- ① $36 \div 9 = \underline{4}$ ② $72 \div 9 = \underline{8}$ ③ $81 \div 9 = \underline{9}$
 ④ $27 \div 9 = \underline{3}$ ⑤ $54 \div 9 = \underline{6}$ ⑥ $9 \div 9 = \underline{1}$
 ⑦ $63 \div 9 = \underline{7}$ ⑧ $45 \div 9 = \underline{5}$ ⑨ $18 \div 9 = \underline{2}$

Mixed Review: Find each quotient.

- ⑩ $27 \div 3 = \underline{9}$ ⑪ $32 \div 4 = \underline{8}$ ⑫ $8 \div 1 = \underline{8}$
 ⑬ $24 \div 6 = \underline{4}$ ⑭ $35 \div 5 = \underline{7}$ ⑮ $18 \div 2 = \underline{9}$
 ⑯ $63 \div 7 = \underline{9}$ ⑰ $54 \div 9 = \underline{6}$ ⑱ $16 \div 8 = \underline{2}$
 ⑲ $3 \div 1 = \underline{3}$ ⑳ $24 \div 3 = \underline{8}$ ㉑ $14 \div 2 = \underline{7}$
 ㉒ $28 \div 4 = \underline{7}$ ㉓ $36 \div 6 = \underline{6}$ ㉔ $21 \div 7 = \underline{3}$
 ㉕ $40 \div 5 = \underline{8}$ ㉖ $56 \div 8 = \underline{7}$ ㉗ $81 \div 9 = \underline{9}$

Fill in the correct bubble to answer each question.

Which of these is equal to $64 \div 8$?

- 6 8 9

Which of these is equal to 7?

- $45 \div 5$ $54 \div 8$ $42 \div 6$

Which of these has the same quotient as $12 \div 3$?

- $24 \div 8$ $27 \div 3$ $28 \div 7$

Which of these has the same quotient as $36 \div 4$?

- $63 \div 7$ $56 \div 7$ $49 \div 7$

Which of these has the same quotient as $16 \div 2$?

- $42 \div 7$ $40 \div 5$ $24 \div 4$

Circle whether each equation is true or false.

- ① **TRUE** or FALSE? ② TRUE or **FALSE**?
 $56 \div 7 = 8$ $63 \div 9 = 6$
 ③ **TRUE** or FALSE? ④ TRUE or **FALSE**?
 $48 \div 8 = 6$ $28 \div 3 = 9$
 ⑤ TRUE or **FALSE**? ⑥ **TRUE** or FALSE?
 $45 \div 5 = 8$ $49 \div 7 = 7$

Fill in the missing number that would make each equation true.

- ⑦ $9 \div 3 = \underline{3}$ ⑧ $40 \div \underline{8} = 5$
 ⑨ $32 \div \underline{8} = 4$ ⑩ $\underline{42} \div 6 = 7$
 ⑪ $54 \div 9 = \underline{6}$ ⑫ $\underline{64} \div 8 = 8$
 ⑬ $12 \div \underline{6} = 2$ ⑭ $\underline{18} \div 3 = 6$
 ⑮ $36 \div 6 = \underline{6}$ ⑯ $\underline{14} \div 2 = 7$

Use division to solve each problem.

- ① Alex buys 40 pounds of dog food. There are 5 pounds in each bag. How many bags of dog food does Alex buy?
 $\underline{40} \div \underline{5} = \underline{8}$ bags
- ② 63 pretzels are divided evenly among 7 people. How many pretzels does each person get?
 $\underline{63} \div \underline{7} = \underline{9}$ pretzels
- ③ Sam has 81 baseball cards that he is putting into protective sheets. Each sheet has enough pockets to hold 9 cards. How many sheets will Sam use to hold all of his cards?
 $\underline{81} \div \underline{9} = \underline{9}$ sheets
- ④ Megan is baking rolls that come in a package of 8. If she wants to make 64 rolls all together, how many packages will she need to use?
 $\underline{64} \div \underline{8} = \underline{8}$ packages
- ⑤ Shawna makes a rectangular tray of brownies and slices them into 3 rows. If there are 24 brownies all together, how many are in each row?
 $\underline{24} \div \underline{3} = \underline{8}$ brownies

For each set of three numbers given, write four related multiplication and division facts.

①	<table border="1"> <tr> <td>3</td> <td>18</td> <td>6</td> </tr> </table>	3	18	6	$3 \times 6 = 18$ $6 \times 3 = 18$ $18 \div 3 = 6$ $18 \div 6 = 3$
3	18	6			
②	<table border="1"> <tr> <td>28</td> <td>4</td> <td>7</td> </tr> </table>	28	4	7	$4 \times 7 = 28$ $7 \times 4 = 28$ $28 \div 4 = 7$ $28 \div 7 = 4$
28	4	7			

Multiply or divide.

- | | | |
|---------------------|---------------------|----------------------|
| ③ $21 \div 3 = 7$ | ④ $9 \times 5 = 45$ | ⑤ $81 \div 9 = 9$ |
| ⑥ $56 \div 7 = 8$ | ⑦ $6 \times 4 = 24$ | ⑧ $36 \div 6 = 6$ |
| ⑨ $8 \times 8 = 64$ | ⑩ $49 \div 7 = 7$ | ⑪ $7 \times 10 = 70$ |
| ⑫ $40 \div 10 = 4$ | ⑬ $3 \times 8 = 24$ | ⑭ $27 \div 3 = 9$ |

Multiply or divide to solve each word problem.

- ① Juice boxes come in packs of 6. A team needs 48 juice boxes. How many packs do they need?
- 8 packs $48 \div 6 = 8$
- ② Paula is making omelets using 3 eggs each. How many omelets can she make if she uses a whole carton of 12 eggs?
- 4 omelets $12 \div 3 = 4$
- ③ Damian has 36 books. If he splits them evenly between 4 shelves, how many books will be on each shelf?
- 9 books $36 \div 4 = 9$
- ④ Reagan's cookie recipe calls for 2 cups of flour per batch. How many cups of flour would Reagan need to make 5 batches?
- 10 cups $2 \times 5 = 10$
- ⑤ Paper plates come in packs of 8. If there will be 56 guests at a party, how many packs of plates are needed to give each guest one plate?
- 7 packs $56 \div 8 = 7$

In each equation, a letter stands for an unknown number. Find the value of the unknown number, then write a related fact to show how you know.

(Related facts may vary but should use the same 3 numbers)

- | | |
|--|--|
| <p>⑧ $7 \times n = 21$
 $n = 3$
 Related fact:
 $21 \div 7 = 3$</p> | <p>① $12 + p = 20$
 $p = 8$
 Related fact:
 $20 - 12 = 8$</p> |
| <p>② $35 \div m = 5$
 $m = 7$
 Related fact:
 $35 \div 5 = 7$</p> | <p>③ $25 - a = 19$
 $a = 6$
 Related fact:
 $25 - 19 = 6$</p> |
| <p>④ $b + 8 = 17$
 $b = 9$
 Related fact:
 $17 - 8 = 9$</p> | <p>⑤ $q \times 9 = 54$
 $q = 6$
 Related fact:
 $54 \div 9 = 6$</p> |
| <p>⑥ $d - 3 = 14$
 $d = 17$
 Related fact:
 $14 + 3 = 17$</p> | <p>⑦ $c \div 4 = 7$
 $c = 28$
 Related fact:
 $4 \times 7 = 28$</p> |

Solve each word problem using the correct operation.

- ① Tara has \$78. She spends \$14 on a bracelet. How much money does she have left?
- $\$78 - \$14 = \$64$
- ② A can of soda contains 8 ounces. How many ounces of soda are in a six-pack of cans?
- $8 \times 6 = 48$ ounces
- ③ On Monday, Seth runs for 3 kilometers. On Tuesday, he runs for 3 more kilometers than he did on Monday. How many kilometers did he run in total on both days?
- $3 + 3 + 3 = 9$ kilometers
- ④ Fiona has a goal of drinking 72 ounces of water while she's at work each day. If she works for 8 hours a day, how many ounces should she try to drink per hour to meet her goal?
- $72 \div 8 = 9$ ounces
- ⑤ Reggie earns \$30 an hour at his job. How much will he earn after working 9 hours?
- $\$30 \times 9 = \270

Fill in both equations to solve each two-step word problem.

- ex Kim is making quiches for a brunch. She has a full carton of 12 eggs and another carton that contains 8 eggs. Each quiche takes 4 eggs, and she uses all the eggs. How many quiches does Kim make?

$$\underline{12} + \underline{8} = \underline{20} \text{ eggs}$$

$$\underline{20} \div \underline{4} = \underline{5} \text{ quiches}$$

- 1 Damian took a box of crayons and gave 4 to each of the 8 kids in his group. When he finished, there were 7 crayons left in the box. How many crayons were originally in the box?

$$\underline{4} \times \underline{8} = \underline{32} \text{ crayons given out}$$

$$\underline{32} + \underline{7} = \underline{39} \text{ crayons originally in the box}$$

- 2 Marcus was carrying a stack of 12 plates when he tripped. Some of the plates fell and 2 of them broke. He set down the remaining plates in 2 equal piles. How many plates were in each pile?

$$\underline{12} - \underline{2} = \underline{10} \text{ remaining plates}$$

$$\underline{10} \div \underline{2} = \underline{5} \text{ plates in each pile}$$

- 3 A book has 1 chapter that is 12 pages long and the other 8 chapters are each 10 pages long. How many pages are in the book all together?

$$\underline{8} \times \underline{10} = \underline{80} \text{ pages in the equal chapters}$$

$$\underline{80} + \underline{12} = \underline{92} \text{ pages}$$

- 4 There are 26 girls and 22 boys in a P.E. class. They split up into teams of 8 students for a game. How many teams are there?

$$\underline{26} + \underline{22} = \underline{48} \text{ students in the class}$$

$$\underline{48} \div \underline{8} = \underline{6} \text{ teams}$$

- 5 At a Thanksgiving dinner, there are 4 pies, each cut into 8 slices. After 3 people each eat a slice, how many slices are left?

$$\underline{4} \times \underline{8} = \underline{32} \text{ slices of pie in all}$$

$$\underline{32} - \underline{3} = \underline{29} \text{ slices left}$$

- 6 Jamie is 7 years old. Jamie's brother Craig is 3 years older than Jamie. Their mom is 4 times as old as Craig. How old is their mom?

$$\underline{7} + \underline{3} = \underline{10} \text{ years old (Craig's age)}$$

$$\underline{10} \times \underline{4} = \underline{40} \text{ years old (their mom's age)}$$

Write two equations to solve each word problem.

- 1 Keisha has 7 five-dollar bills. She spends \$12 on a toy. How much money does she have left?

$$\underline{7} \times \underline{\$5} = \underline{\$35} \quad \underline{\$35} - \underline{\$12} = \underline{\$23}$$

Keisha has \$23 left.

- 2 Aiden has a sheet of stickers that contains 6 rows of 4 stickers. After he uses 5 of the stickers, how many are left?

$$\underline{6} \times \underline{4} = \underline{24} \quad \underline{24} - \underline{5} = \underline{19}$$

Aiden has 19 stickers left.

- 3 A party venue charges a flat rate of \$200, plus \$9 per party guest. What would it cost to have a party there for 10 people?

$$\underline{\$9} \times \underline{10} = \underline{\$90} \quad \underline{\$90} + \underline{\$200} = \underline{\$290}$$

It would cost \$290.

- 4 There are 9 kids at a park. Then, 3 more kids come. They split into 2 teams for a game. How many kids are on each team?

$$\underline{9} + \underline{3} = \underline{12} \quad \underline{12} \div \underline{2} = \underline{6}$$

There are 6 kids on each team.

- 5 Aria buys one 8-foot wooden board and four 6-foot boards. What is the total length of the wooden boards she buys?

$$\underline{4} \times \underline{6} = \underline{24} \quad \underline{24} + \underline{8} = \underline{32}$$

The total length is 32 feet.

- 6 Josie cuts a 36-inch-long ribbon into 4 equal pieces. Then, she cuts 2 inches off of one piece. How long is that piece now?

$$\underline{36} \div \underline{4} = \underline{9} \quad \underline{9} - \underline{2} = \underline{7}$$

The piece is 7 inches long.

- 7 Mr. Cole bought 3 boxes of 10 markers each for his students to use. 4 of the markers are now missing. How many are left?

$$\underline{3} \times \underline{10} = \underline{30} \quad \underline{30} - \underline{4} = \underline{26}$$

There are 26 markers left.

- 8 In 6 days, Jasmine biked 32 miles. If she biked 5 miles each of the first 5 days, how many miles did she bike on the 6th day?

$$\underline{5} \times \underline{5} = \underline{25} \quad \underline{32} - \underline{25} = \underline{7}$$

Jasmine biked 7 miles on the 6th day.

Circle whether each shape is divided into equal or unequal shares.

equal <u>unequal</u>	<u>equal</u> unequal	equal <u>unequal</u>	<u>equal</u> unequal

Draw lines to divide each shape into equal shares. (Answers may vary)

①	②
③	④
⑤	⑥

Fill in the correct bubble to answer each question. Some questions may have more than one correct answer.

Which of these shapes are divided into fourths?

Which of these shapes are divided into thirds?

Which of these shapes are divided into eighths?

Which of these shapes are divided into halves?

Which of these shapes are divided into sixths?

Write the number of equal shares shown in each shape. Then, write the name for the equal parts.

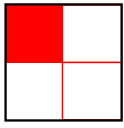
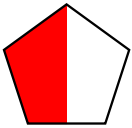
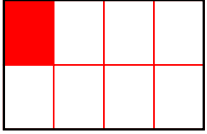

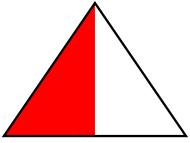

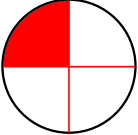
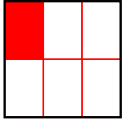
EX	①
<u>3</u> parts name: <u>thirds</u>	<u>8</u> parts name: <u>eighths</u>
②	③
<u>6</u> parts name: <u>sixths</u>	<u>2</u> parts name: <u>halves</u>
④	⑤
<u>4</u> parts name: <u>fourths</u>	<u>3</u> parts name: <u>thirds</u>

Write the fraction that names the shaded part of each whole.

EX	①	<u>1/2</u>
②	③	<u>1/6</u>
④	⑤	<u>1/4</u>
⑥	⑦	<u>1/6</u>

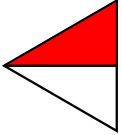
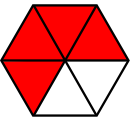
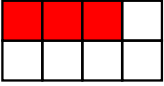


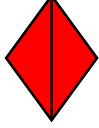
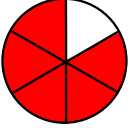
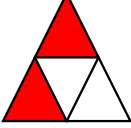
Divide each shape into equal shares and color to show the fraction.

(Answers may vary)


$\frac{1}{4}$ 	$\frac{1}{2}$ 
$\frac{1}{8}$ 	$\frac{1}{6}$ 
$\frac{1}{2}$ 	$\frac{1}{3}$ 
$\frac{1}{4}$ 	$\frac{1}{6}$ 


Color equal shares to show each fraction.

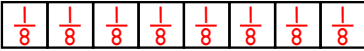
(Answers may vary)

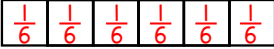
$\frac{1}{2}$ 	$\frac{4}{6}$ 
$\frac{3}{8}$ 	$\frac{2}{3}$ 
$\frac{3}{4}$ 	$\frac{2}{2}$ 
$\frac{5}{6}$ 	$\frac{2}{4}$ 


Fill in the bar model with the fraction that each share represents.

EX 



① 



② 



③ 

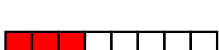

④ 

Color in shares of the bar model to show each fraction.

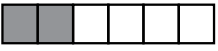
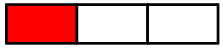
EX $\frac{3}{6}$  ⑤ $\frac{7}{8}$ 

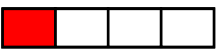

⑥ $\frac{2}{3}$  ⑦ $\frac{3}{4}$ 



⑧ $\frac{1}{2}$  ⑨ $\frac{5}{6}$ 



⑩ $\frac{3}{8}$  ⑪ $\frac{2}{4}$ 

Divide each rectangle into a bar model to show each fraction.


EX $\frac{2}{6}$  ① $\frac{1}{3}$ 


② $\frac{1}{4}$  ③ $\frac{5}{8}$ 

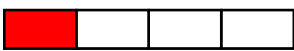
④ $\frac{4}{6}$  ⑤ $\frac{4}{4}$ 

⑥ $\frac{6}{8}$  ⑦ $\frac{1}{2}$ 

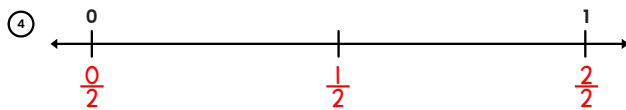
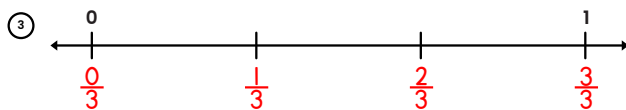
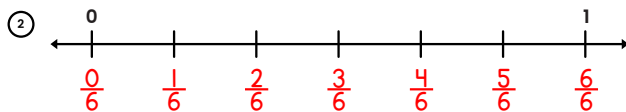
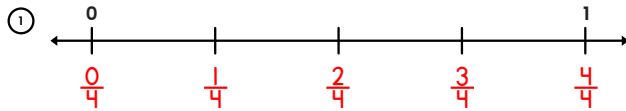
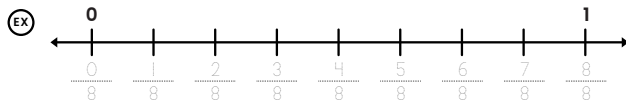
Draw a bar model to represent each situation. Write the fraction on the line.

⑧ Greg has 8 books. He has read 4 of them. What fraction of his books has he read?
 $\frac{4}{8}$

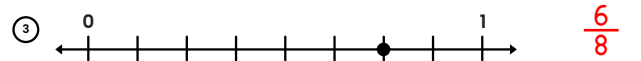
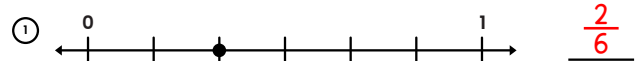
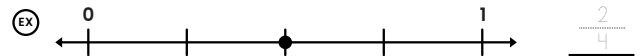
⑨ Isabelle has 3 cats. 2 of them are black. What fraction of her cats are NOT black?
 $\frac{1}{3}$

⑩ Logan has 1 brother and 3 sisters. What fraction of his siblings are girls?
 $\frac{3}{4}$

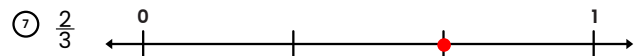
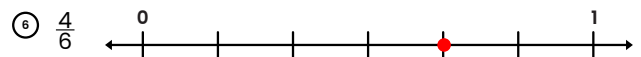
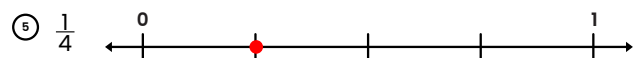
Label each number line with fractions.



Write the fraction represented by the dot on each number line.



Draw a dot on each number line to represent the fraction shown.



Draw any model to help you solve each word problem.

(Models may vary)

There are 5 boys and 3 girls in a group. What fraction of the group are girls?



$$\frac{3}{8}$$

A family of 6 is eating burgers for dinner. 4 of them have cheese on their burgers. What fraction of them do NOT have cheese on their burgers?



$$\frac{2}{6}$$

There are 4 photos hanging on the living room wall in Allie's house. Allie is in 3 of the photos. What fraction of the photos do NOT have Allie in them?



$$\frac{1}{4}$$

Jason has 4 pairs of blue pants and 2 pairs of black pants. What fraction of his pants are black?



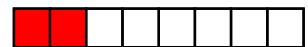
$$\frac{2}{6}$$

Alex folds a piece of paper into 3 equal parts and cuts off 1 part. What fraction of the paper is left?



$$\frac{2}{3}$$

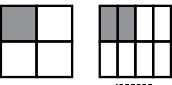
Jill invites 8 friends to a party. 2 of them cannot come. What fraction of the friends Jill invited come to the party?

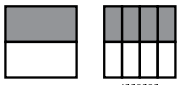


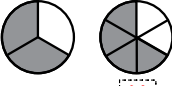
$$\frac{6}{8}$$

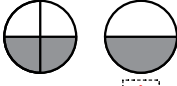
102 Equivalent Fractions

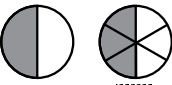
Use the models to complete the equivalent fractions.

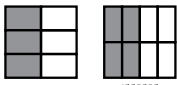
EX  $\frac{1}{4} = \frac{2}{8}$

①  $\frac{1}{2} = \frac{4}{8}$

②  $\frac{2}{3} = \frac{4}{6}$

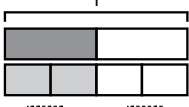
③  $\frac{2}{4} = \frac{1}{2}$

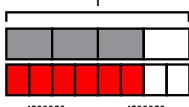
④  $\frac{1}{2} = \frac{3}{6}$


⑤  $\frac{3}{6} = \frac{4}{8}$


Equivalent Fractions 103


Color in shares on the bottom bar model to make a fraction equivalent to the one shown in the shaded portion of the top. Then, complete the equation.

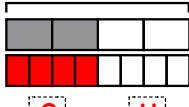
EX  $\frac{1}{4} = \frac{2}{8}$

①  $\frac{3}{4} = \frac{6}{8}$

②  $\frac{2}{3} = \frac{4}{6}$

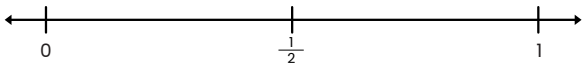
③  $\frac{3}{4} = \frac{2}{2}$

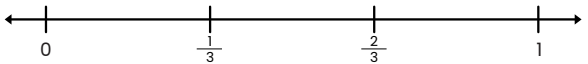
④  $\frac{4}{8} = \frac{4}{8}$

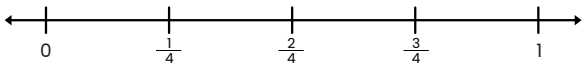
⑤  $\frac{2}{8} = \frac{4}{4}$

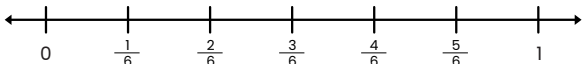
104 Equivalent Fractions

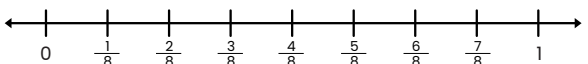
Use the number lines to find equivalent fractions.









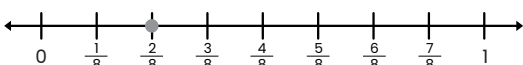


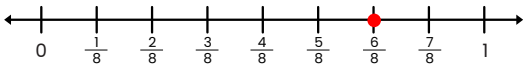
① $\frac{1}{3} = \frac{2}{6}$ ② $\frac{1}{2} = \frac{4}{8}$ ③ $\frac{6}{8} = \frac{3}{4}$

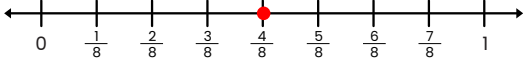
④ $\frac{4}{6} = \frac{2}{3}$ ⑤ $\frac{2}{4} = \frac{4}{8}$ ⑥ $\frac{1}{2} = \frac{3}{6}$

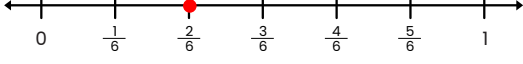
Equivalent Fractions 105

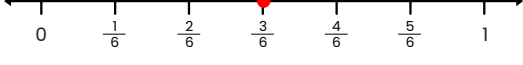
Graph each number on the number line.

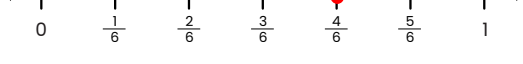
EX  $\frac{1}{4}$

①  $\frac{3}{4}$

②  $\frac{1}{2}$

③  $\frac{1}{3}$

④  $\frac{1}{2}$

⑤  $\frac{2}{3}$

106 Equivalent Fractions

Circle the fractions in each row that are equivalent to the first fraction. Put a star on the fraction in each row that is in lowest terms.

$\frac{4}{8}$	<input checked="" type="checkbox"/> $\frac{2}{4}$	$\frac{1}{3}$	<input checked="" type="checkbox"/> $\frac{1}{2}$ ★	$\frac{5}{6}$
$\frac{4}{6}$	$\frac{3}{4}$	<input checked="" type="checkbox"/> $\frac{2}{3}$ ★	$\frac{6}{8}$	$\frac{1}{3}$
$\frac{2}{4}$	$\frac{4}{6}$	<input checked="" type="checkbox"/> $\frac{1}{2}$ ★	<input checked="" type="checkbox"/> $\frac{3}{6}$	$\frac{2}{3}$
★ $\frac{1}{3}$	<input checked="" type="checkbox"/> $\frac{2}{6}$	$\frac{4}{8}$	$\frac{3}{6}$	$\frac{2}{4}$
★ $\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{4}{6}$	<input checked="" type="checkbox"/> $\frac{6}{8}$
★ $\frac{1}{2}$	<input checked="" type="checkbox"/> $\frac{3}{6}$	<input checked="" type="checkbox"/> $\frac{2}{4}$	$\frac{3}{8}$	$\frac{1}{3}$

Equivalent Fractions 107

Fill in the correct bubble to answer each question.

Which of these is equal to 3?

$\frac{3}{6}$ $\frac{3}{3}$ $\frac{3}{1}$

Which of these is equal to 1?

$\frac{6}{1}$ $\frac{1}{2}$ $\frac{8}{8}$

Which of these is equal to 4?

$\frac{4}{1}$ $\frac{2}{8}$ $\frac{4}{4}$

Which of these is NOT equal to 1?

$\frac{2}{2}$ $\frac{1}{1}$ $\frac{8}{1}$

Which of these is equal to $\frac{6}{6}$?

$\frac{5}{5}$ $\frac{3}{1}$ $\frac{2}{3}$

108 Comparing Fractions

Write the fraction shown by the shaded region of each model. Then, use >, <, or = to compare each pair of fractions.

EX $\frac{2}{4}$ < $\frac{2}{4}$

1 $\frac{6}{8}$ > $\frac{4}{8}$

2 $\frac{4}{6}$ < $\frac{5}{6}$

3 $\frac{2}{2}$ > $\frac{1}{2}$

4 $\frac{1}{3}$ < $\frac{2}{3}$

5 $\frac{3}{6}$ = $\frac{3}{6}$

Use >, <, or = to compare each pair of fractions.

EX $\frac{1}{3}$ < $\frac{2}{3}$ 6 $\frac{3}{4}$ > $\frac{2}{4}$ 7 $\frac{1}{2}$ = $\frac{1}{2}$

8 $\frac{4}{8}$ < $\frac{5}{8}$ 9 $\frac{2}{6}$ > $\frac{1}{6}$ 10 $\frac{3}{3}$ > $\frac{2}{3}$

Comparing Fractions 109

Write the fraction shown by the shaded region of each model. Then, use >, <, or = to compare each pair of fractions.

EX $\frac{2}{4}$ < $\frac{1}{2}$

1 $\frac{3}{6}$ < $\frac{3}{6}$

2 $\frac{2}{3}$ > $\frac{2}{6}$

3 $\frac{1}{2}$ > $\frac{1}{8}$

4 $\frac{1}{3}$ > $\frac{1}{4}$

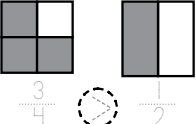
5 $\frac{4}{6}$ < $\frac{4}{4}$

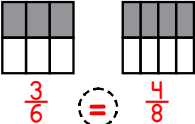
Use >, <, or = to compare each pair of fractions.

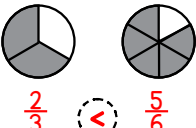
EX $\frac{1}{3}$ < $\frac{1}{2}$ 6 $\frac{1}{6}$ > $\frac{1}{8}$ 7 $\frac{2}{4}$ > $\frac{2}{6}$

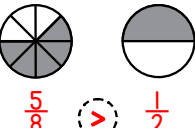
8 $\frac{2}{8}$ < $\frac{2}{3}$ 9 $\frac{3}{6}$ < $\frac{3}{3}$ 10 $\frac{4}{6}$ > $\frac{4}{8}$

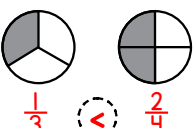
Write the fraction shown by the shaded region of each model. Then, use $>$, $<$, or $=$ to compare each pair of fractions.

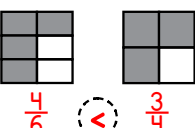
EX  $\frac{3}{4}$ $=$ $\frac{1}{2}$

1  $\frac{3}{6}$ $=$ $\frac{4}{8}$

2  $\frac{2}{3}$ $<$ $\frac{5}{6}$

3  $\frac{5}{8}$ $>$ $\frac{1}{2}$

4  $\frac{1}{3}$ $<$ $\frac{2}{4}$


5  $\frac{4}{6}$ $<$ $\frac{3}{4}$


Use $>$, $<$, or $=$ to compare each pair of fractions.

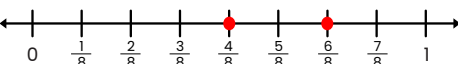
EX $\frac{1}{3}$ $<$ $\frac{3}{4}$ 6 $\frac{3}{6}$ $<$ $\frac{2}{3}$ 7 $\frac{3}{8}$ $<$ $\frac{1}{2}$


8 $\frac{2}{8}$ $=$ $\frac{1}{4}$ 9 $\frac{5}{6}$ $>$ $\frac{3}{4}$ 10 $\frac{2}{3}$ $<$ $\frac{7}{8}$


Graph each pair of fractions on the number line. Then, circle the larger fraction.

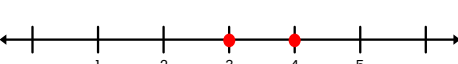
EX $\frac{1}{4}$ $\frac{3}{8}$ 

1 $\frac{3}{4}$ $\frac{5}{8}$ 

2 $\frac{1}{2}$ $\frac{6}{8}$ 

3 $\frac{1}{3}$ $\frac{1}{6}$ 

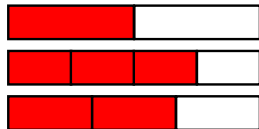
4 $\frac{2}{3}$ $\frac{5}{6}$ 

5 $\frac{4}{6}$ $\frac{1}{2}$ 

Draw any visual model to help you answer each word problem.

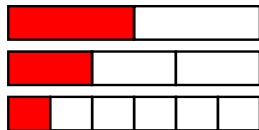
(Models may vary)

Nina practiced violin for $\frac{1}{2}$ hour on Monday, for $\frac{3}{4}$ hour on Tuesday, and for $\frac{2}{3}$ hour on Wednesday. On which of the three days she she practice the longest?



She practiced the longest on Tuesday.

Kaya is frosting 24 cupcakes. She puts pink frosting on $\frac{1}{2}$ of the cupcakes, blue on $\frac{2}{3}$ of them, and green on $\frac{1}{6}$ of them. Which color does she use on the most cupcakes?



She uses pink on the most cupcakes.

Alicia and Reagan are working on the same homework assignment.

Alicia has finished $\frac{5}{6}$ of the problems so far, and Reagan has finished $\frac{2}{3}$. Who has finished more of the assignment?



Alicia has finished more of the assignment.

Fill in the correct bubble to answer each question.

A recipe calls for 1 cup of flour. Kyle has a $\frac{1}{3}$ cup scoop. How many scoops of flour will he need?

- 1 2 3

A recipe calls for $\frac{1}{2}$ teaspoon of salt, $\frac{1}{4}$ teaspoon of pepper, and $\frac{2}{3}$ teaspoon of cumin. Which ingredient is the least amount?

- salt pepper cumin

Damian is cutting a pizza into equal shares. Which of these shares would be the largest slices of pizza?

- fourths sixths eighths

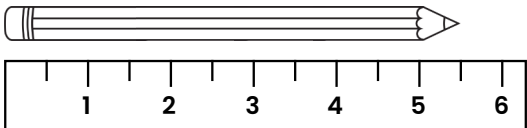
Lena, Nicholas, and Mark count the vowels in their names and write a fraction showing the number of vowels out of the total number of letters in each name. Whose fraction is the largest?

- Lena Nicholas Mark

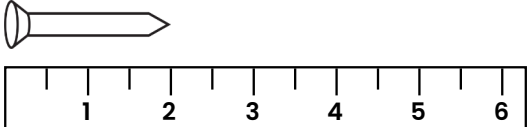
Micah has a measuring cup that holds a fourth of a cup and one that holds half of a cup. How many fourth-cup scoops would equal 2 half-cups?

- 2 4 6

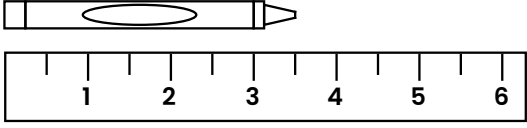
Use the ruler shown to measure the length of each object to the nearest $\frac{1}{2}$ inch.



$5\frac{1}{2}$ inches

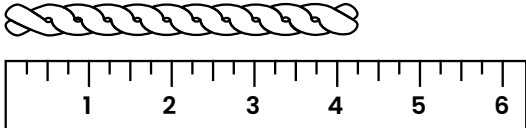


2 inches

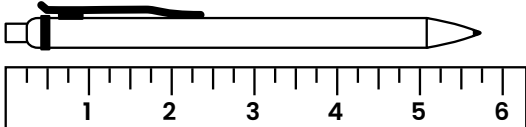


$3\frac{1}{2}$ inches

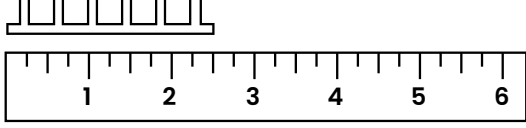
Use the ruler shown to measure the length of each object to the nearest $\frac{1}{4}$ inch.



$4\frac{1}{4}$ inches

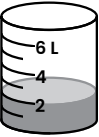


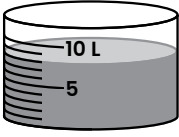
$5\frac{3}{4}$ inches

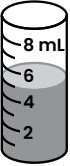


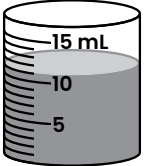
$2\frac{1}{2}$ inches (or $2\frac{2}{4}$)

Find the volume of liquid in each container shown.

①  2 liters

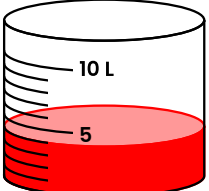
②  8 liters

③  5 milliliters

④  11 milliliters

⑤ Drew has 7 liters of water in a container. He pours out 3 liters. How many liters are left? Draw to show the remaining water in the container.

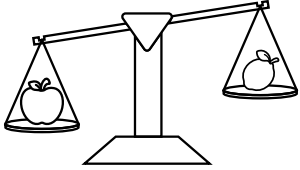
4 liters



Answer each question about mass based on the pictures shown.

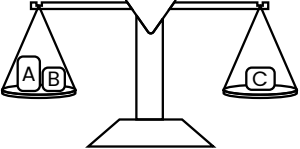
① The apple has a mass of 100 grams. The difference in mass between the apple and the lemon is 15 grams. What is the mass of the lemon?

85 grams



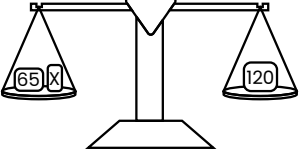
② Three different weights, labeled A, B, and C, are placed on the scale. Which has the greatest mass? Explain how you know.

C, because it is equal to A and B together



③ The masses (in grams) of two weights are shown in the picture. What is the mass of the weight marked X?

55 grams



Fill in the correct bubble to answer each question.

Which of these most likely contains a volume of liquid close to 1 liter?

- A bottle of eye drops A kiddie pool A bottle of shampoo

Which of these is NOT a measure of mass?

- liter gram kilogram

Which of these is most likely to be the mass of a car?

- 10 kg 1000 g 1000 kg

Which of these is most likely to be the volume of liquid in a full juice box?

- 10 mL 120 mL 2 L

Which of these masses would you most likely measure in grams rather than kilograms?

- A horse A cell phone A bowling ball

Solve each word problem about volume or mass.

- ① Container A contains 6 L of water. Container B contains 12 L of water. Gina pours water from Container B into Container A until they contain the same volume of water. How much water is in each container now?

$$\underline{9} \text{ liters} \quad \begin{aligned} 12 + 6 &= 18 \text{ L} \\ 18 \div 2 &= 9 \text{ L} \end{aligned}$$

- ② Ryan measures the mass of his three dogs. Fido's mass is 23 kg, Spot's mass is 18 kg, and Rover's mass is 29 kg. What is the difference in mass between the heaviest and lightest dogs?

$$\underline{11} \text{ kg} \quad 29 - 18 = 11 \text{ kg}$$

- ③ Sheila has 40 identical marbles, each with a mass of 3 grams. What is the total mass of the marbles?

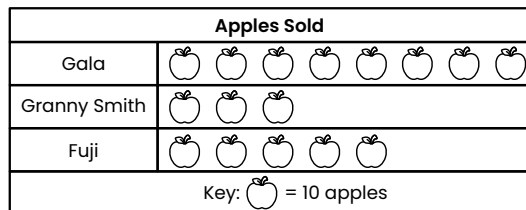
$$\underline{120} \text{ grams} \quad 40 \times 3 = 120 \text{ g}$$

- ④ A beaker contains 80 mL of liquid. Ruby uses a dropper that holds 5 mL to remove liquid. If she fills her dropper 6 times with liquid from the beaker, how much liquid is left in the beaker when she finishes?

$$\underline{50} \text{ mL} \quad \begin{aligned} 5 \times 6 &= 30 \\ 80 - 30 &= 50 \text{ mL} \end{aligned}$$

Use the information and picture graph shown below to answer questions 1-4.

A farmer recorded how many of each type of apple he sold at his stand on a certain day. The results are shown in the picture graph.



- ① How many of each types of apple did he sell?

Gala: 80 Granny Smith: 30 Fuji: 50

- ② How many apples were sold all together?

$$80 + 30 + 50 = 160 \text{ apples}$$

- ③ How many more Galas did he sell than Fujis?

$$80 - 50 = 30 \text{ more Galas}$$

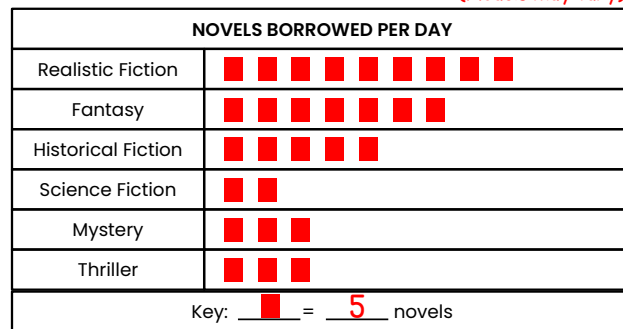
- ④ How many fewer Granny Smiths did he sell than Fujis?

$$50 - 30 = 20 \text{ fewer Granny Smiths}$$

Use the information below to create a picture graph. Then, answer the questions that follow.

A library tracked the number of novels that were borrowed by genre. On an average day, library patrons borrowed 45 realistic fiction novels, 35 fantasy novels, 25 historical fiction novels, 10 science fiction novels, 15 mystery novels, and 15 thrillers.

Create a picture graph to represent this data. Choose a symbol to represent a quantity of books greater than 1. (Models may vary)



- ① Explain your key and why you chose the number you did.

(Answers may vary)

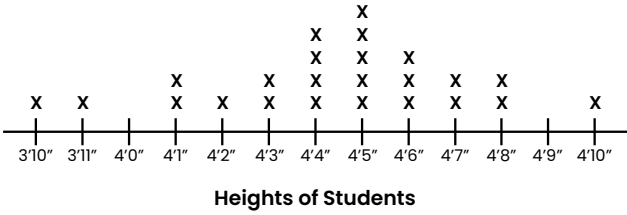
- ② What is the total number of novels patrons borrowed on an average day?

$$\underline{145} \text{ novels} \quad 45 + 35 + 25 + 10 + 15 + 15 = 145$$

124 Representing Data

Use the line plot to answer the questions that follow.

The line plot below shows the heights of students in Ms. Iverson's class.

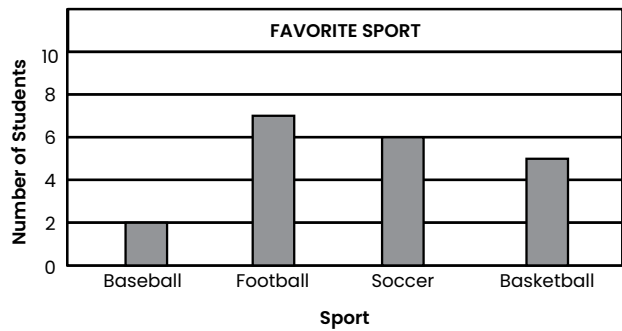


- ① What is the most common height in the class?
4'5"
- ② How many students in the class are taller than 4'0"?
22
- ③ What is the difference in height between the tallest student in the class and the shortest?
12 inches (1 foot)

126 Representing Data

Use the bar graph to answer the questions that follow.

Joey surveys his classmates about their favorite sport. The results are shown in the bar graph below.



- ① How many students chose football or soccer as their favorite sport?
7 + 6 = 13 students
- ② How many more students chose basketball than baseball?
5 - 2 = 3 students
- ③ How many students did NOT choose football as their favorite sport?
2 + 6 + 5 = 13 students

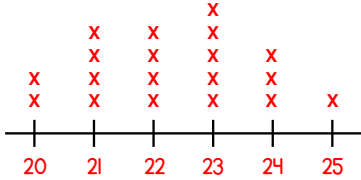
125 Representing Data

Make a line plot to show the data given. Then, answer the questions below.

Students in Mr. Hammond's class grew bean plants. The students measured the heights of their plants to the nearest centimeter. The results are shown in the chart below.

Bean Plant Height	Number of Plants
20 cm	2
21 cm	4
22 cm	4
23 cm	5
24 cm	3
25 cm	1

Create a line plot to show this data.



- ① Which height was the most common?
23 cm
- ② How many plants had a height less than 22 cm?
6 plants
- ③ How many bean plants were there in all?
19

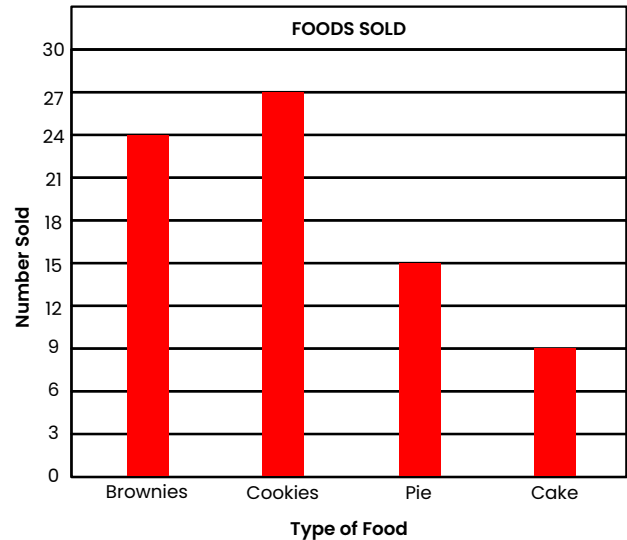
127 Representing Data

Make a bar graph to show the data given.











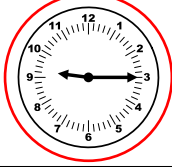
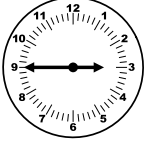
Jenny recorded the sales of each type of food at a bake sale.

- 24 brownies
- 27 cookies
- 15 pies
- 9 cakes









Choose an appropriate scale and record the data on the bar graph below. *(Graphs may vary depending on scale chosen)*



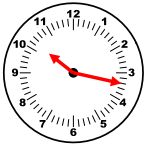



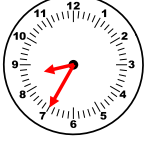

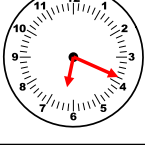

Circle the analog clock in each row that shows the same time as the digital clock.

Write the time shown on each clock.

	<u>1:08</u>		<u>3:36</u>
	<u>7:44</u>		<u>4:56</u>
	<u>10:00</u>		<u>8:32</u>
	<u>9:13</u>		<u>11:10</u>

Draw hands onto each clock to show the correct time.

	10:17		5:42
	1:30		11:03
	8:35		9:54
	6:19		12:25

Fill in the correct bubble to answer each question.

Which time is 35 minutes after 11:23 AM?

- 10:48 AM 11:48 AM 11:58 AM

Which time is 18 minutes before 10:30 PM?

- 10:12 PM 10:18 PM 10:48 PM

Which time is 20 minutes after 9:57 AM?

- 9:37 AM 10:17 AM 10:27 AM

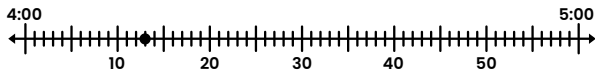
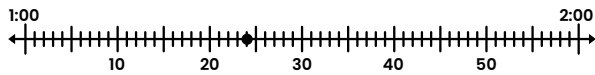
Which time is 30 minutes before 5:14 PM?

- 4:34 PM 4:44 PM 5:44 PM

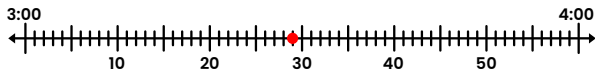
Which time is 1 hour and 10 minutes after 8:52 PM?

- 9:02 PM 9:52 PM 10:02 PM

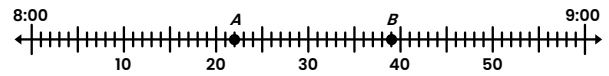
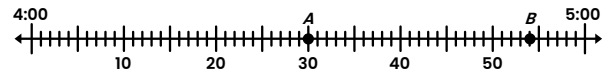
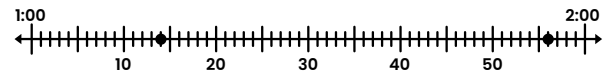
Each number line below represents one hour on a clock. Write the time shown by the dot on each number line.

① 8:47② 4:13③ 1:24

Draw a dot on the number line to show each time.

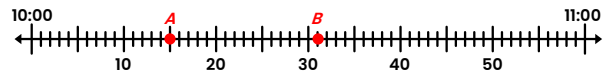
① 6:52② 3:29

Write how many minutes have passed from point A to point B.

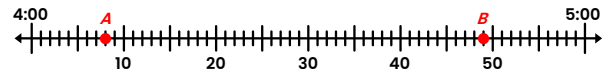
① 17 minutes② 24 minutes③ 42 minutes

Draw points A and B on the number lines to show each time.

① Point A: 10:15 Point B: 16 minutes later



② Point A: 4:08 Point B: 41 minutes later



Write how much time has elapsed between the time on each pair of clocks.

2:13 PM 1 hour, 23 minutes 3:46 PM

1:30 PM 1 hour, 7 minutes 2:37 PM

7:24 AM 29 minutes 7:53 AM

8:53 AM 13 minutes 9:06 AM

5:10 PM 2 hours, 5 minutes 7:15 PM

Answer each word problem about time.

6:47 AM The clock on the left shows the current time. Alyssa's alarm will go off at 7:00 AM. How many minutes does she have left until her alarm goes off?

13 minutes

9:15 AM The clock on the left shows the time Shawn's math class starts. The class lasts 40 minutes. What time will it end?

9:55 AM

3:36 PM The clock on the left shows the time Jordan got home after riding the bus from school. If Jordan's bus left school at 3:11 PM, how long was he on the bus?

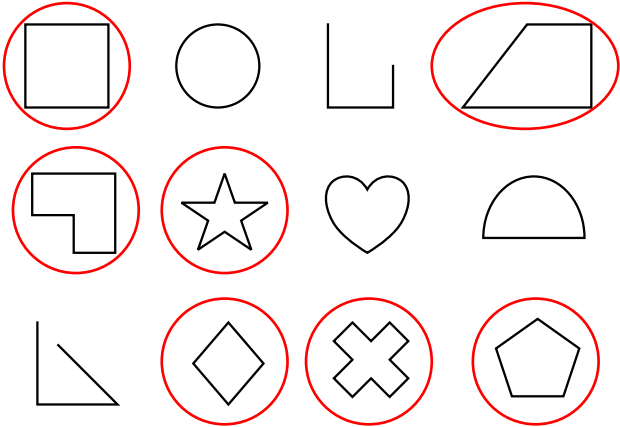
25 minutes

8:30 PM The clock on the left shows Julia's bedtime. If it is 7:05 PM now, how long does she have left until bedtime?

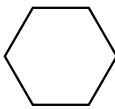
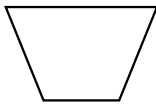
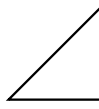
1 hour, 25 minutes

138 **Classifying Shapes**

Circle the shapes that are polygons.

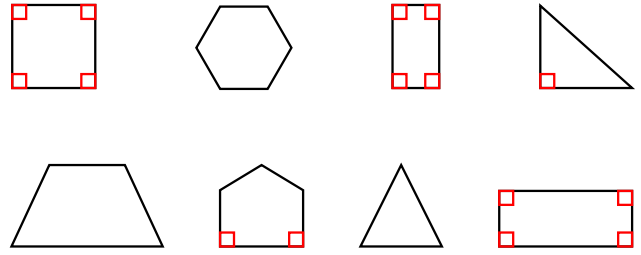


Name each shape. Write the number of sides and angles it has.



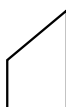

		
hexagon	trapezoid	triangle
<u>6</u> sides	<u>4</u> sides	<u>3</u> sides
<u>6</u> angles	<u>4</u> angles	<u>3</u> angles

Classifying Shapes 139

Draw a small square to mark any angle that appears to be a right angle. (Not all shapes will have one, and some may have more than one.)







Write how many of each type of angle each shape appears to have.

	<u>2</u> Less than 90° <u>1</u> 90° <u>0</u> More than 90°		<u>2</u> Less than 90° <u>0</u> 90° <u>2</u> More than 90°
	<u>1</u> Less than 90° <u>2</u> 90° <u>1</u> More than 90°		<u>3</u> Less than 90° <u>0</u> 90° <u>0</u> More than 90°

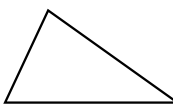

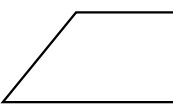
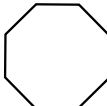
140 **Classifying Shapes**

On each shape, two sides are shown in gray. Circle whether each pair of gray sides is parallel or not parallel and equal or unequal in length.

	<u>Parallel</u>	<u>Equal length</u>
	Not parallel	Unequal length
	<u>Parallel</u>	Equal length
	Not parallel	<u>Unequal length</u>
	Parallel	<u>Equal length</u>
	<u>Not parallel</u>	Unequal length
	Parallel	Equal length
	<u>Not parallel</u>	<u>Unequal length</u>

Classifying Shapes 141

Circle ALL the words that describe each shape.

	<u>Polygon</u>	<u>Triangle</u>
	Quadrilateral	Trapezoid
	<u>Polygon</u>	Triangle
	<u>Quadrilateral</u>	Trapezoid
	<u>Polygon</u>	Triangle
	<u>Quadrilateral</u>	<u>Trapezoid</u>
	<u>Polygon</u>	Triangle
	Quadrilateral	Trapezoid

142 **Classifying Shapes**

Fill in the correct bubble to answer each question about quadrilaterals.

Which quadrilateral always has 4 equal sides and 4 right angles?

- rhombus rectangle square

Which of these shapes always has 2 pairs of parallel sides?

- parallelogram trapezoid kite

Which of these shapes could have an angle less than 90°?

- rectangle square parallelogram

Which of these could have adjacent sides that are NOT equal?

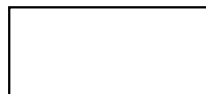
- square parallelogram kite

Which of these could have an angle greater than 90°?

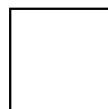
- trapezoid square rectangle

143 **Classifying Shapes**

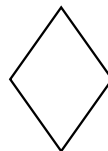
Circle ALL the words that describe each quadrilateral.



- Parallelogram Rhombus
 Square Rectangle



- Parallelogram Rhombus
 Square Rectangle



- Parallelogram Rhombus
 Square Rectangle



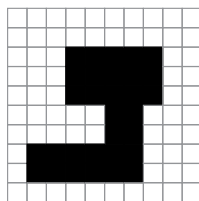
- Parallelogram Rhombus
 Square Rectangle

144 **Perimeter**

Find the perimeter by counting on the grid.

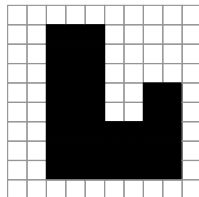
1 What is the perimeter of the shape shown on the grid?

32 units



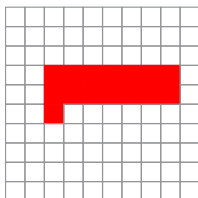
2 What is the perimeter of the shape shown on the grid?

34 units

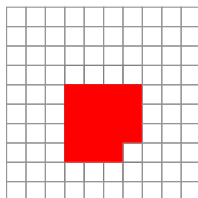


Draw a shape on each grid that has the perimeter shown. (Answers may vary)

3 20 units

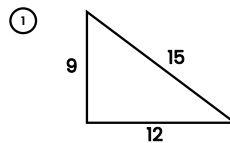


4 16 units

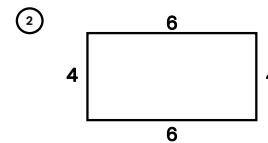


145 **Perimeter**

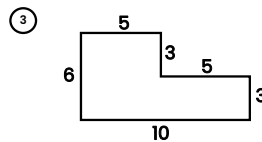
Find the perimeter of each shape.



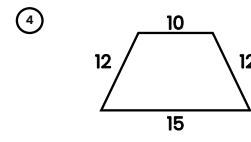
36 units



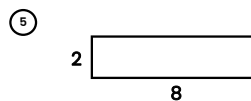
20 units



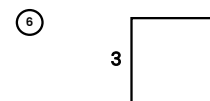
32 units



49 units



20 units



12 units

146 Perimeter

Answer each word problem about perimeter.

A picture frame measures 18 inches by 20 inches. What is the perimeter of the frame?

$18 + 20 + 18 + 20 = 76$

76 inches

Betty is building a fence around her rectangular garden, which measures 12 feet by 15 feet. What will be the total length of the fence?

$12 + 15 + 12 + 15 = 54$

54 feet

A rectangular piece of paper measures 21 cm by 29 cm. What is the perimeter of the piece of paper?

$21 + 29 + 21 + 29 = 100$

100 cm

Perimeter 147

A sports field measures 60 meters by 100 meters. What is its perimeter?

$60 + 100 + 60 + 100 = 320$

320 meters

Melody has a square rug with a perimeter of 32 feet. How long is each side of the rug?

$32 \div 4 = 8$

8 feet


Carl is putting baseboard trim around the edges of a 10 foot by 12 foot bedroom. The trim costs \$1 per foot. What will be the total cost of the trim for the room?


$10 + 12 + 10 + 12 = 44$

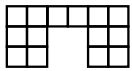
\$44

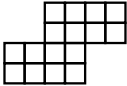
148 Area

Each shape is made up of unit squares. Count to find the area of each shape in square units.

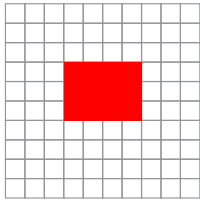
1  8 square units

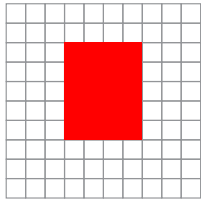
2  12 square units

3  14 square units

4  16 square units



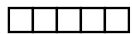



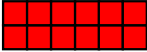

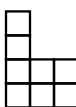
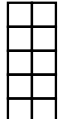




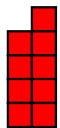
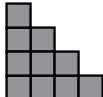
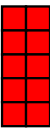
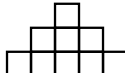





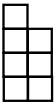

Draw a shape on each grid that has the area shown. (Answers may vary.)

5 12 square units 



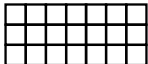
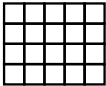


6 20 square units 

Area 149

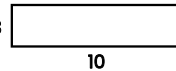
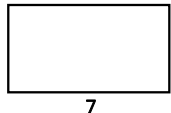
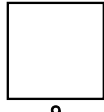
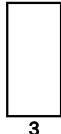


Color the shapes in each row that have the same area as the first shape.

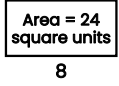
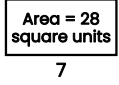
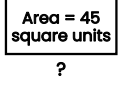
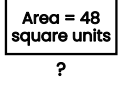
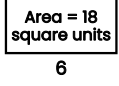
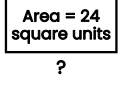
Each rectangle is made of unit squares. Multiply the length by the width to find the area.

- EX  $\underline{6} \times \underline{2} = \underline{12}$ square units
- ①  $\underline{4} \times \underline{4} = \underline{16}$ square units
- ②  $\underline{7} \times \underline{3} = \underline{21}$ square units
- ③  $\underline{5} \times \underline{4} = \underline{20}$ square units
- ④  $\underline{2} \times \underline{4} = \underline{8}$ square units
- ⑤  $\underline{8} \times \underline{3} = \underline{24}$ square units

Multiply the length by the width to find the area of each rectangle.

- ①  $\underline{30}$ square units
- ②  $\underline{35}$ square units
- ③  $\underline{81}$ square units
- ④  $\underline{24}$ square units
- ⑤  $\underline{48}$ square units
- ⑥  $\underline{9}$ square units

Use the area and divide to find the missing side length of each rectangle.

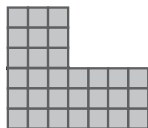
- EX  $\underline{24} \div \underline{8} = \underline{3}$ units
- ①  $\underline{28} \div \underline{7} = \underline{4}$ units
- ②  $\underline{45} \div \underline{5} = \underline{9}$ units
- ③  $\underline{48} \div \underline{6} = \underline{8}$ units
- ④  $\underline{18} \div \underline{6} = \underline{3}$ units
- ⑤  $\underline{24} \div \underline{4} = \underline{6}$ units

Solve each word problem involving area.

- ① Rachel is buying new carpet for her living room. The rectangular room measures 5 meters by 6 meters. How many square meters of carpet will she need?
 $\underline{30}$ sq. meters $5 \times 6 = 30$
- ② The deck in Malcolm's backyard measures 8 feet by 10 feet. What is the area of the deck?
 $\underline{80}$ sq. feet $8 \times 10 = 80$
- ③ Everett is tiling his bathroom floor with square tiles that measure 1 foot by 1 foot. The bathroom measures 5 feet by 8 feet. How many tiles will he need to cover the floor?
 $\underline{40}$ tiles $5 \times 8 = 40$
- ④ Gabby hangs two posters on her wall. Each one measures 2 feet by 3 feet. What is the total area of the two posters?
 $\underline{12}$ sq. feet $2 \times 3 = 6$ $6 + 6 = 12$
- ⑤ A rectangular sign has an area of 63 square feet. If the width of the sign is 7 feet, what is the length of the sign?
 $\underline{9}$ feet $63 \div 7 = 9$

Draw a line to divide each shape into two rectangles. Find the area of each, then add to find the total area.

EX

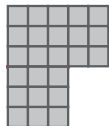


$$\text{Area 1} = \underline{9} \text{ square units}$$

$$\text{Area 2} = \underline{21} \text{ square units}$$

$$\underline{9} + \underline{21} = \underline{30} \text{ square units}$$

①

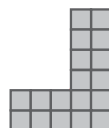


$$\text{Area 1} = \underline{15} \text{ square units}$$

$$\text{Area 2} = \underline{9} \text{ square units}$$

$$\underline{15} + \underline{9} = \underline{24} \text{ square units}$$

②

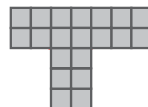


$$\text{Area 1} = \underline{8} \text{ square units}$$

$$\text{Area 2} = \underline{10} \text{ square units}$$

$$\underline{8} + \underline{10} = \underline{18} \text{ square units}$$

③



$$\text{Area 1} = \underline{14} \text{ square units}$$

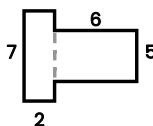
$$\text{Area 2} = \underline{6} \text{ square units}$$

$$\underline{14} + \underline{6} = \underline{20} \text{ square units}$$

(Areas 1 and 2 may vary depending on where the shape is split, but total area should be the same as shown.)

Draw a line to divide each shape into two rectangles. Find the area of each, then add to find the total area.

EX

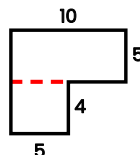


$$\text{Area 1} = \underline{14} \text{ square units}$$

$$\text{Area 2} = \underline{30} \text{ square units}$$

$$\underline{14} + \underline{30} = \underline{44} \text{ square units}$$

①

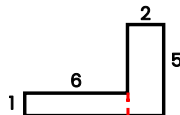


$$\text{Area 1} = \underline{50} \text{ square units}$$

$$\text{Area 2} = \underline{20} \text{ square units}$$

$$\underline{50} + \underline{20} = \underline{70} \text{ square units}$$

②

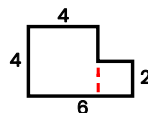


$$\text{Area 1} = \underline{6} \text{ square units}$$

$$\text{Area 2} = \underline{10} \text{ square units}$$

$$\underline{6} + \underline{10} = \underline{16} \text{ square units}$$

③



$$\text{Area 1} = \underline{16} \text{ square units}$$

$$\text{Area 2} = \underline{4} \text{ square units}$$

$$\underline{16} + \underline{4} = \underline{20} \text{ square units}$$

(Areas 1 and 2 may vary depending on where the shape is split, but total area should be the same as shown.)