Name _____

Add Dollars and Cents

To add money amounts, line up the decimal points and then add as with whole numbers.

Find the sum.

$38.37 + $41.47

Step 1

Write the problem on grid paper. Align the digits by place value. Think of pennies as hundredths and dimes as tenths.

		T	O		T	H
	$	3	8	.	3	7
+	$	4	1	.	4	7

Step 2

Add the hundredths. Regroup 14 hundredths as 1 tenth 4 hundredths. Write 1 in the tenths column.

Then add the tenths.

		T	O		T	H
					1	
	$	3	8	.	3	7
+	$	4	1	.	4	7
					8	4

Step 3

Add the ones and then add the tens. Regroup if necessary.

Write the decimal point and dollar sign.

		T	O		T	H
					1	
	$	3	8	.	3	7
+	$	4	1	.	4	7
	$	7	9	.	8	4

So, $38.37 + $41.47 = **$79.84**.

Find the sum.

1. $7.81 + $5.09

2. $35.06 + $51.48

3. $ 5.32 + $85.44

4. $40.36 + $17.45

5. $37.60 + $ 9.04

6. $80.26 + $19.31

7. $48.04 + $64.65

8. $52.66 + $50.48

9. $8.47 + $7.33

10. $69.19 + $ 4.95

11. $24.70 + $62.33

12. $10.00 + $25.75

Name _____

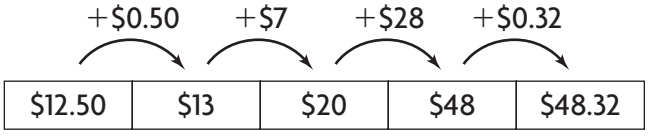
Subtract Dollars and Cents

You can count up to find a difference.

Find the difference.

$48.32 − $12.50

Step 1 Start with $12.50, the amount being subtracted. Count up until you reach $48.32. Record each amount that you use to count up.



Step 2 Add the distances between counts to find the difference.

$0.50 + $7.00 + $28.00 + $0.32 = $35.82

So, $48.32 − $12.50 = **$35.82**.

Find the difference.

1. $7.22 − $4.02

2. $36.06 − $34.48

3. $80.00 − $35.75

4. $98.36 − $21.15

5. $47.90 − $ 8.34

6. $60.24 − $14.10

7. $78.54 − $ 9.62

8. $52.00 − $10.98

9. $75.32 − $24.32

10. $85.09 − $43.56

11. $90.50 − $76.80

12. $12.13 − $ 4.58

Name _____

Algebra • Order of Operations

The **order of operations** is a set of rules that gives the order in which calculations are done in an expression.

Use the order of operations to find the value of the expression. Show each step.

Order of Operations

1. First, perform operations inside the parentheses.
2. Then, multiply and divide from left to right.
3. Last, add and subtract from left to right.

$8 + (10 \div 5) - 4$

Step 1	Step 2	Step 3
First divide. **Think:** $10 \div 5 = 2$	Then add and subtract from left to right. **Think:** $8 + 2 = 10$	Subtract.
$8 + (10 \div 5) - 4$ $8 + 2 - 4$	$8 + 2 - 4$ $10 - 4$	$10 - 4 = 6$

So, $8 + (10 \div 5) - 4 = 6$.

Write *correct* if the operations are listed in the correct order. If not correct, write the correct order of operations.

1. $(9 \div 3) \times 4$ multiply, divide

_____

2. $15 - (8 \div 2)$ subtract, divide

_____

3. $(36 + 10) \times 3$ multiply, add

_____

4. $(16 - 4) \div 2 + 5$ subtract, divide, add

_____

Follow the order of operations to find the value of the expression. Show each step.

5. $(6 \times 7) + 3$

_____

6. $(8 + 12) \div 4$

_____

7. $(20 - 5) \times 3 + 4$

_____

8. $18 + 6 + (16 \div 4)$

_____

Name _____

Divide by Multiples of Ten

You can use basic facts and patterns to divide by multiples of ten.

Divide. Use a pattern to help.

6,000 ÷ 30

Step 1

Look for a basic fact.

6,000 ÷ 30

Think: 6 ÷ 3

The basic fact is **6 ÷ 3 = 2.**

Step 2

Use the basic fact to find a division sentence with the same divisor as the original problem.

6,000 ÷ **30** ← divisor

Think: 6 ÷ 3 = 2, so
60 ÷ 30 = 2.

Step 3

Now look for a pattern.

Think: If the number of zeros in the dividend increases, the number of zeros in the quotient increases by the same number.

dividend → **60 ÷ 30 = 2** ← quotient
600 ÷ 30 = 20
6,000 ÷ 30 = 200

So, 6,000 ÷ 30 = **200**.

Divide. Use a pattern to help.

1. 1,600 ÷ 20 = _____ **2.** 2,400 ÷ 80 = _____ **3.** 3,600 ÷ 40 = _____

4. 1,200 ÷ 30 = _____ **5.** 8,000 ÷ 40 = _____ **6.** 2,000 ÷ 50 = _____

7. 6,000 ÷ 10 = _____ **8.** 4,900 ÷ 70 = _____ **9.** 5,400 ÷ 60 = _____

Name _____

Model Division with 2-Digit Divisors

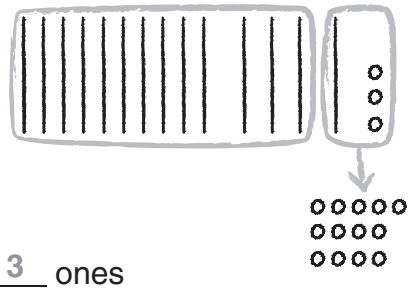
You can use models to divide a whole number by a 2-digit divisor.

Use base-ten blocks to find 143 ÷ 13.

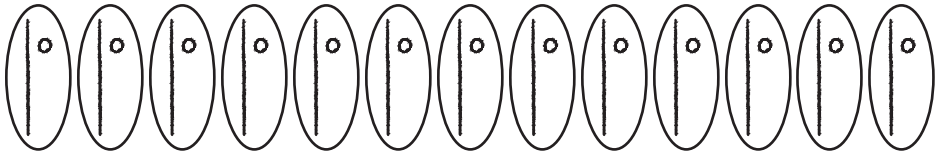
Step 1 Use base-ten blocks to model the dividend, 143.
Show 143 as 1 hundred 4 tens 3 ones.

Remember: Each large square represents 100, each line represents 10, and each small circle represents 1.

Step 2 The divisor is 13. Divide the blocks equally between 13 groups. Since you cannot share the one-hundred square equally between the 13 groups, first break it into 10 tens. Then you will have 14 tens, altogether. Share the tens equally among 13 groups.



Step 3 After completing Step 2, you will have 1 ten and 3 ones left over. Since you cannot share the 10 equally between the 13 groups, break it into 10 ones. Then you will have 13 ones, altogether. Share the 13 ones equally among the 13 groups.



Each group contains 1 ten and 1 one, or 11. So 143 ÷ 13 = 11.

Use base-ten blocks to divide.

1. 65 ÷ 5 = _____

2. 84 ÷ 14 = _____

3. 120 ÷ 8 = _____

4. 96 ÷ 16 = _____

5. 168 ÷ 12 = _____

6. 99 ÷ 33 = _____

Name _____

Place Value Through Millions

You can use a place-value chart to help you read and write numbers through millions.

You can group the digits in a whole number into sections called periods. Each period has 3 digits.

Each digit in a whole number has both a place and a value. In the place value chart below, the digit 3 is in the hundred thousands place. So its value is $3 \times 100{,}000$, or 300,000.

Periods

Millions			Thousands			Ones		
Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	8	7	3	1	4	6	5	9

Use the place-value chart to read and write the number in standard form, word form, and expanded form.

Standard Form: 287,314,659

Word Form: two hundred eighty-seven million, three hundred fourteen thousand, six hundred fifty-nine

Expanded Form: 200,000,000 + 80,000,000 + 7,000,000 + 300,000 + 10,000 + 4,000 + 600 + 50 + 9

Read and write the number in two other forms.

1. sixty million, forty thousand, two hundred twenty-nine

_____

_____

_____

2. 8,000,000 + 300,000 + 2,000 + 100 + 8

_____

_____

_____

_____

Name _____

Decimals and Place Value

You can write decimals, like whole numbers, in standard form, word form, and expanded form.

In a place-value chart, whole numbers are to the left of the decimal point. Decimal amounts are to the right of the decimal point. The value of each place is one-tenth, or $\frac{1}{10}$, of the place to its left.

When you write a decimal in word form, write the decimal point as "and."

Write the decimal 12.34 in word form and expanded form.

Start by writing 12.34 in a place-value chart. First, align the decimal point with the decimal in the chart. Then place the digits.

Hundreds	Tens	Ones	.	Tenths	Hundredths
	1	2	.	3	4
	1 × 10	2 × 1	.	3 × $\frac{1}{10}$	4 × $\frac{1}{100}$
	10	2	.	$\frac{3}{10}$	$\frac{4}{100}$

Word form: 12.34 ← Two decimals indicate hundredths.

Twelve and thirty-four hundredths

Expanded Form: Use the last row of the chart to help you write the decimal in expanded form.

12.34 = 10 + 2 + 0.3 + 0.04

Read and write the decimal in two other forms.

1. eight and seven tenths

_____

2. 10 + 3 + 0.9 + 0.05

_____

Name _____

Round Decimals

You can use a number line to round whole numbers. You can also use a number line to round decimals.

Round 1.82 to the nearest whole number.

Step 1 Find the whole numbers it is between. 1 < 1.82 < 2

Step 2 Plot the number on a number line. See which whole number it is closest to.

1.82 is closer to 2 than 1.

So, 1.82 rounded to the nearest whole number is 2.

Note: If you are rounding a number with 5 in the tenths place, round the number to the greater whole number.

1.5 rounded to the nearest whole number is 2. However, 1.49 rounds to 1.

Round to the nearest dollar or to the nearest whole number.

1. $1.23	**2.** 3.7	**3.** 7.12	**4.** $5.50
_____	_____	_____	_____
5. $2.89	**6.** 9.2	**7.** $4.49	**8.** 6.51
_____	_____	_____	_____
9. 8.5	**10.** $5.01	**11.** $1.89	**12.** $8.21
_____	_____	_____	_____

Place Value to Compare Decimals

You can use a place-value chart to help you compare decimals.

Use a place-value chart to compare the decimals. Write <, >, or =.

4.28 4.23

Step 1 Write both decimals in a place-value chart. Line up each place and the decimal.

Step 2 Compare the numbers in each place, starting with the numbers in the ones place and working your way right.

Ones	.	Tenths	Hundredths
4	.	2	8
4	.	2	3

$4 = 4$ $2 = \underline{2}$ $8 > \underline{3}$

Step 3 Since 8 is greater than 3, 4.28 is greater than 4.23.

So, $4.28 > 4.23$.

1. Use the place-value chart below to compare the decimals. Write <, >, or =.

Ones	.	Tenths	Hundredths
8	.	9	2
8	.	9	7

$8 = 8$ $9 = \_\_\_\_$ $2 < \_\_\_\_$

So, $8.92 < 8.97$.

Compare the decimals. Write <, >, or =.

2. 6.87 ◯ 6.80 **3.** 9.17 ◯ 9.19 **4.** 5.73 ◯ 5.78 **5.** 1.23 ◯ 1.22

6. 2.56 ◯ 2.5 **7.** 3.7 ◯ 3.70 **8.** 7.22 ◯ 7.2 **9.** 4.4 ◯ 4.04

Name _____

Decompose Multiples of 10, 100, 1,000

You can decompose a multiple of 10, 100, or 1,000 by finding its factors.

- To decompose a multiple of 10: rewrite it as the product of 10 and another number.
- To decompose a multiple of 100: rewrite it as the product of 100 and another number.
- To decompose a multiple of 1,000: rewrite it as the product of 1,000 and another number.

Decompose 3,200.

One Way Use mental math and a pattern.

3,200 = 3,200 × 1

3,200 = 320 × 10

3,200 = 32 × 100

So 3,200 = 32 × 100.

Another Way Use place value.

3,200 = 32 hundreds = 32 × 100

So 3,200 = 32 × 100.

1. Complete the exercise below to decompose 3,600.

3,600 = _____ × 1

3,600 = _____ × 10

3,600 = _____ × 100

2. Complete the exercise below to decompose 870.

870 = _____ tens = _____ × _____

Decompose each number.

3. 90 = _____ **4.** 5,600 = _____ **5.** 3,000 = _____

Name _____

Number Patterns

You already know how to use a rule and the first term to write a sequence. Now you will use multiplication to describe a pattern.

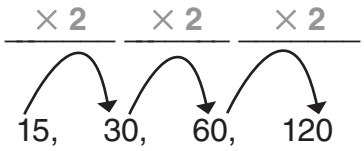
Stephen is saving his money to buy a car. The table shows how much money he has saved at the end of each month. If the pattern continues, how much money will Stephen have saved after months 5 and 6?

Number of Months	1	2	3	4
Total Amount Saved ($)	15	30	60	120

Step 1 Describe the sequence.

Think: How do I get from one term to the next?

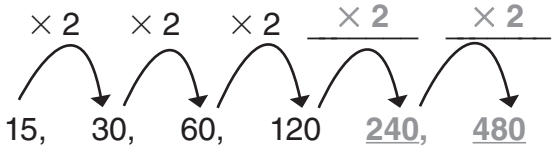
Try multiplying by 2, since $15 \times 2 = 30$.



Step 2 Write a rule that describes how much money Stephen has saved at the end of each month.

Rule: Multiply by 2.

Step 3 Use the rule to find the next two terms in the sequence.



So, at the end of month 5, Stephen will have saved $240.
At the end of month 6, have will have saved $480.

Describe the pattern. Then find the next two numbers in the pattern.

1. 2, 10, 50, _____, _____

2. 2, 6, 18, _____, _____

Name _____

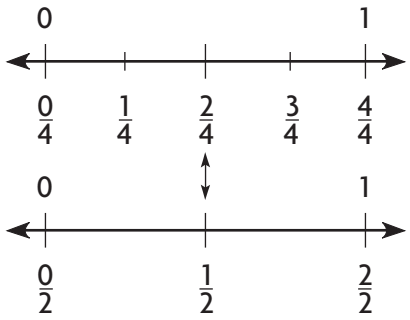
Add Related Fractions

You can add fractions with different denominators using a number line.
First find an equivalent fraction so that both fractions have the same denominator.

Add $\frac{1}{4} + \frac{1}{2}$. Use a number line to help.

Step 1 Draw a number line from 0 to 1. Divide it into 4 equal parts. Label the number line in fourths.

Step 2 Draw another number line directly below the first number line. Line up the 0s and 1s. Divide the second number line into 2 equal parts. Label it.



Step 3 Find how many fourths are equal to $\frac{1}{2}$.

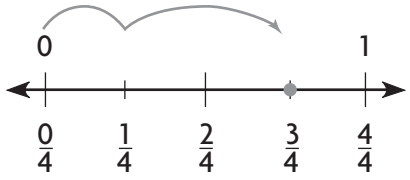
$\frac{1}{2} = \frac{2}{4}$

Step 4 Add. Use the equivalent fraction for $\frac{1}{2}$.

$\frac{1}{4} + \frac{1}{2} = \frac{1}{4} + \frac{2}{4}$

$= \frac{3}{4}$

So, $\frac{1}{4} + \frac{1}{2} = \frac{3}{4}$.



Add. Use a number line to help.

1. $\frac{3}{4} + \frac{1}{8} =$ ____

2. $\frac{1}{6} + \frac{2}{3} =$ ____

3. $\frac{2}{5} + \frac{1}{10} =$ ____

4. $\frac{4}{8} + \frac{1}{2} =$ ____

5. $\frac{1}{2} + \frac{1}{6} =$ ____

6. $\frac{4}{12} + \frac{1}{4} =$ ____

Name _____

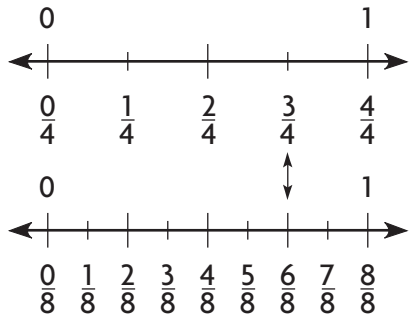
Subtract Related Fractions

You can subtract fractions with different denominators using a number line.
First find an equivalent fraction so that both fractions have the same denominator.

Subtract $\frac{3}{4} - \frac{1}{8}$. Use a number line to help.

Step 1 Draw a number line from 0 to 1. Divide it into 4 equal parts. Label the number line in fourths.

Step 2 Draw another number line directly below the first number line. Line up the 0s and 1s. Divide the second number line into 8 equal parts. Label it.



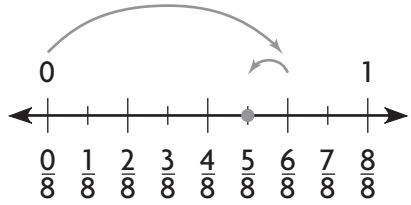
Step 3 Find how many eighths are equal to $\frac{3}{4}$.

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

Step 4 Add. Use the equivalent fraction for $\frac{3}{4}$.

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

So, $\frac{3}{4} - \frac{1}{8} = \frac{5}{8}$.



Subtract. Use a number line to help.

1. $\frac{5}{6} - \frac{1}{3} =$ ____

2. $\frac{1}{2} - \frac{1}{4} =$ ____

3. $\frac{5}{8} - \frac{1}{2} =$ ____

4. $\frac{6}{10} - \frac{2}{5} =$ ____

5. $\frac{7}{12} - \frac{1}{3} =$ ____

6. $\frac{6}{8} - \frac{3}{4} =$ ____

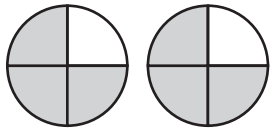
Name _____

Compare Fraction Products

When a fraction less than one is multiplied by a whole number, is the product less than or greater than the fraction?

Is the product of $\frac{3}{4} \times 2$ less than or greater than $\frac{3}{4}$?

Step 1 Show two groups of $\frac{3}{4}$.



The model shows $\frac{6}{4}$ shaded.

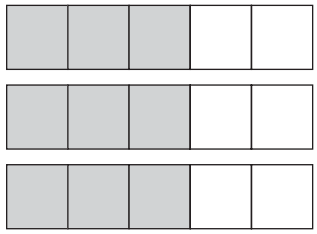
Step 2 Compare. The product $\frac{6}{4}$ is greater than $\frac{3}{4}$.

So, the product of $\frac{3}{4} \times 2$ is greater than $\frac{3}{4}$.

When a whole number is multiplied by a fraction less than one, is the product less than or greater than the whole number?

Is the product of $3 \times \frac{3}{5}$ less than or greater than 3?

Step 1 Show three groups of $\frac{3}{5}$.



The model shows $\frac{9}{5}$ shaded.

Step 2 Compare. The product $\frac{9}{5}$ is less than 3.

So, the product of $3 \times \frac{3}{5}$ is less than 3.

Complete each statement with *greater than* or *less than*.

1. $2 \times \frac{5}{6}$ will be _____ $\frac{5}{6}$.

2. $\frac{3}{8} \times 2$ will be _____ 2.

3. $3 \times \frac{2}{5}$ will be _____ 3.

4. $\frac{2}{3} \times 4$ will be _____ $\frac{2}{3}$.

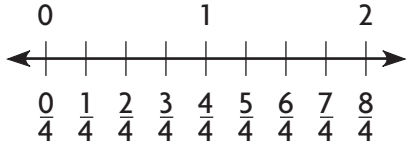
Name _____

Repeated Subtraction with Fractions

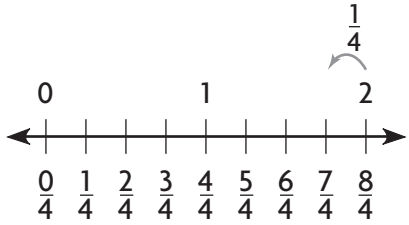
You can use repeated subtraction to divide whole numbers.
You can also use repeated subtraction to divide a whole number by a fraction.

Use repeated subtraction to find $2 \div \frac{1}{4}$.

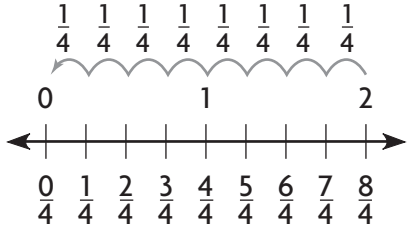
Step 1 Draw a number line from 0 to 2. Divide it into fourths.



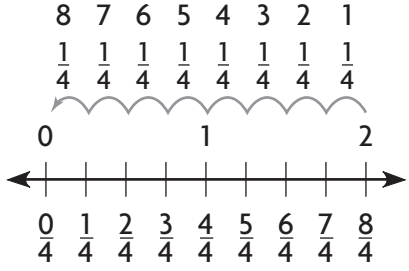
Step 2 Start at 2. Count back by $\frac{1}{4}$ to subtract.



Step 3 Keep subtracting $\frac{1}{4}$ until you reach 0 or get as close to it as possible.



Step 4 Count the number of times you counted back by $\frac{1}{4}$. You counted back **8** groups of $\frac{1}{4}$.



So, $2 \div \frac{1}{4} = 8$.

Use repeated subtraction to divide.

1. $3 \div \frac{1}{2}$ _____

2. $2 \div \frac{1}{5}$ _____

3. $1 \div \frac{1}{4}$ _____

4. $4 \div \frac{1}{3}$ _____

5. $2 \div \frac{1}{6}$ _____

6. $2 \div \frac{1}{8}$ _____

Name _____

Fractions and Division

You can use division to make equal shares or to make equal-sized groups. You can use a fraction to show division.

Write the division problem as a fraction.

$3 \div 4$

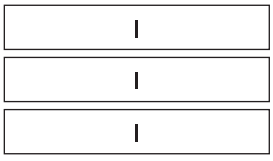
Think of a division sign as a fraction bar.

numerator ÷ denominator ⟷ $\frac{\text{numerator}}{\text{denominator}}$

You can use fraction strips to model the relationship between division and fractions.

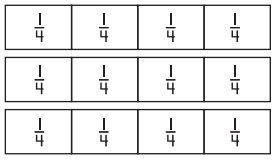
Step 1

Begin with 3 wholes.



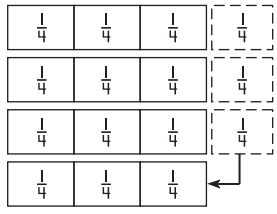
Step 2

Think of each whole as 4 fourth-size pieces.



Step 3

Arrange the fourth-size pieces into 4 equal groups.



There are 3 fourth-size pieces in each equal group.

So, $3 \div 4$ can be written as $\frac{3}{4}$.

Write the division problem as a fraction. Write each fraction greater than 1 as a whole number or mixed number.

1. $9 \div 3$ _____

2. $1 \div 6$ _____

3. $2 \div 8$ _____

4. $5 \div 4$ _____

5. $7 \div 2$ _____

6. $12 \div 8$ _____

Name _____

Locate Points on a Grid

A map has horizontal and vertical lines that make a grid. You can name a point on the grid using an **ordered pair** of numbers.

The first number tells how many units to move right from zero. → (1, 5) ← The second number tells how many units to move up from zero.

Write the ordered pair for the location of the park.

Step 1 Start at zero. Move right. Count the number of units until you are directly below the park.

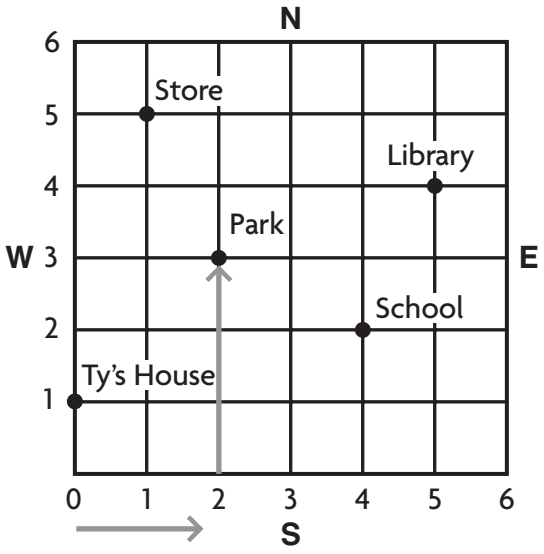
You move right **2** units.

Step 2 Move up. Count the number of units until you reach the park.

You move up **3** units.

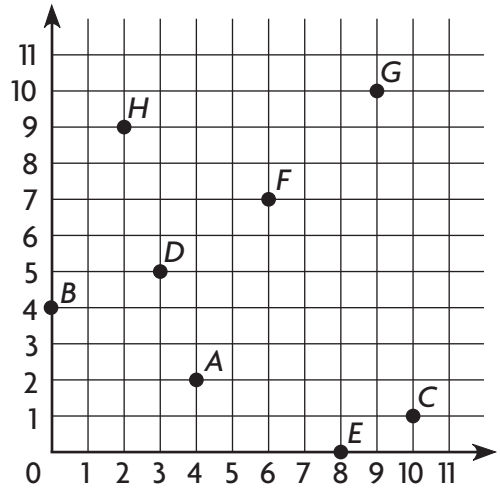
Step 3 You move right **2** units and up **3** units, so the ordered pair is **(2, 3).**

So, the park is located at **(2, 3)** on the map.



Use the grid. Write the ordered pair for each point.

1. *A* _____ **2.** *B* _____ **3.** *C* _____ **4.** *D* _____



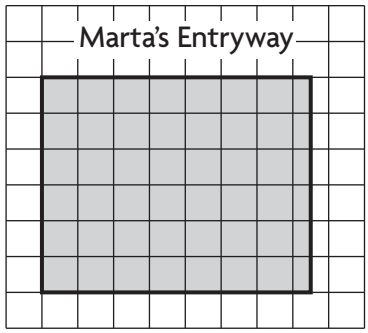
Use the grid. Write the point for each ordered pair.

5. (8, 0) _____ **6.** (9, 10) _____ **7.** (6, 7) _____ **8.** (2, 9) _____

Name _____

Area and Tiling

In the model, whole tiles are shaded, and some half tiles are shaded. You can combine the areas of half tiles and whole tiles to find the total area.



1 square = 4 square feet

Find the area of the entryway.
Write the area in square feet.

Step 1 Count the number of whole tiles.
There are **42** whole tiles.

Step 2 Count the number of half tiles.
There are **6** half tiles.

Think: 2 half tiles = 1 whole tile
6 half tiles = 3 whole tiles

Step 3 Use the total number of whole tiles to find the area.

$42 + 3 = 45$ whole tiles

Think: 1 tile = 4 square feet

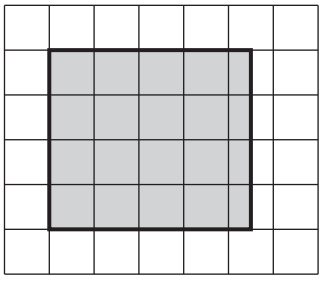
Multiply the number of whole tiles by 4 to find the area.

$45 \times 4 = 180$

So, the area of Marta's entryway is **180 square feet.**

Find the area of each shaded shape. Write the area in square units.

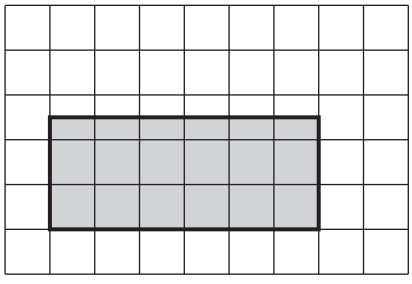
1.



1 square = 4 square feet

_____

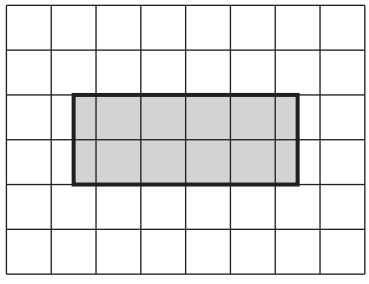
2.



1 square = 9 square meters

_____

3.



1 square = 16 square miles

_____

Name _____

Multiply Three Factors

Step 1

Simplify the problem. Rewrite $2 \times (14 \times 6)$ as a product of two factors.

$2 \times (14 \times 6) = 2 \times (\underline{6} \times 14)$ Commutative Property

$= (2 \times \underline{6}) \times 14$ Associative Property

$= \underline{12} \times 14$

So, $2 \times (14 \times 6) = 12 \times 14$.

Step 2

Multiply.

$$\begin{array}{r} 12 \\ \times\ 14 \\ \hline 48 \\ +\ 120 \\ \hline 168 \end{array} \quad \begin{array}{l} \\ \\ \leftarrow 4 \times 12 \\ \leftarrow 10 \times 12 \\ \leftarrow \text{Add.} \end{array}$$

So, $2 \times (14 \times 6) = 168$.

Remember

Commutative Property of Multiplication
You can multiply factors in any order and still get the same product.
Example: $2 \times 3 = 3 \times 2$

Associative Property of Multiplication
You can group factors in any order and still get the same product.
Example:
$2 \times (3 \times 4) = (2 \times 3) \times 4$

Find each product.

1. $3 \times (16 \times 4) =$ _____

2. $(4 \times 14) \times 6 =$ _____

3. $5 \times (13 \times 5) =$ _____

4. $(16 \times 7) \times 3 =$ _____

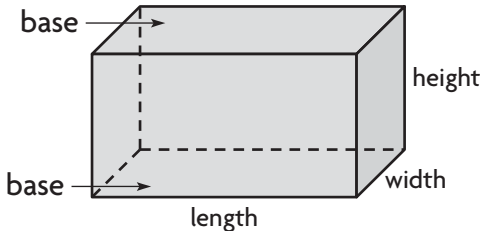
5. $7 \times (18 \times 6) =$ _____

6. $(12 \times 8) \times 6 =$ _____

Name _____

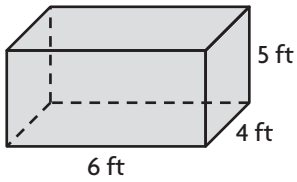
Find Area of the Base

A **rectangular prism** is a solid figure that has three-dimensions: length, width, and height. A rectangular prism has two **bases**. The bases are the same size and shape and are opposite each other. The base shape of a rectangular prism is a rectangle or a square.



You can use the area formulas for a rectangle and a square to find the area of the base of a rectangular prism.

Find the area of the base of the rectangular prism.



Step 1 Identify the base shape.

The length is 6 feet.

The width is 4 feet.

The base shape is a rectangle.

Step 2 Find the area of the base shape.

$A = l \times w$ Think: Use the area formula for a rectangle.

$= 6 \times 4$

$= 24$ square feet

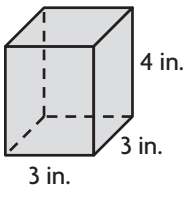
So, the area of the base is 24 square feet.

Remember

Area of a rectangle:
$A = b \times h$ or $A = l \times w$
Area of a square:
$A = s \times s$

Find the area of the base of the rectangular prism.

1.



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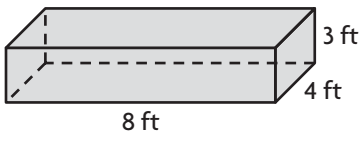
2.



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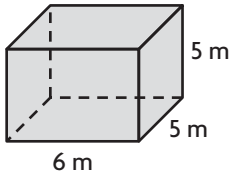
3.



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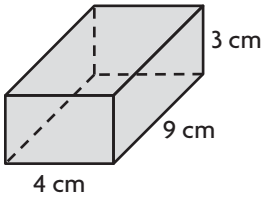
4.



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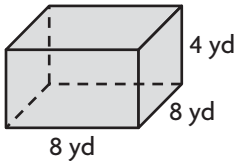

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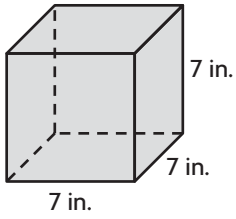
6.



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