Interactive Classroom

Glencoe McGraw-Hill

Pre-Algebra

Chapter 2
Integers

Click the mouse button or press the space bar to continue.

Chapter Menu

Lesson Menu

Main Ideas

- Compare and order integers.
- Find the absolute value of an expression.

New Vocabulary

- negative number
- integers
- coordinate
- inequality
- absolute value

EXAMPLE 1 Write Integers for Real-World Situations

Write an integer for each situation.

A. 32 feet underground –32

B. 8 weeks after birth +8

C. a loss of 6 pounds –6

CHECK Your Progress

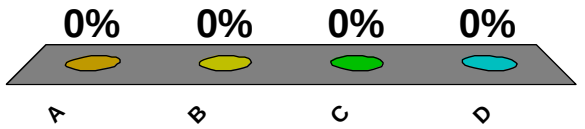
1 **A. Write an integer for *a loss of 12 yards*.**

A. 12

B. –12

C. both A and B

D. neither A nor B



CheckPoint

CHECK Your Progress

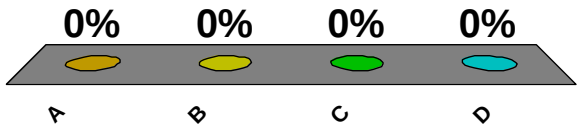
1 **B. Write an integer for *15 feet above sea level.***

A. 15

B. –15

C. both A and B

D. neither A nor B



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CHECK Your Progress

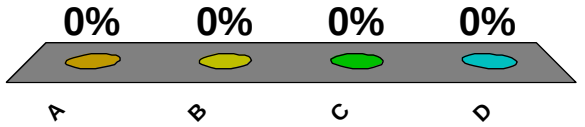
1 **C. Write an integer for *the temperature decreased by 4 degrees.***

A. 4

B. –4

C. both A and B

D. neither A nor B



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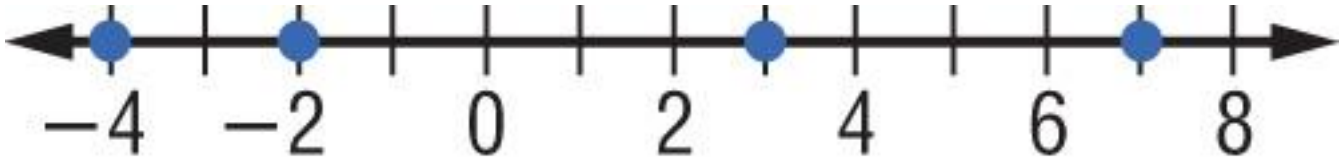
EXAMPLE Compare Two Integers

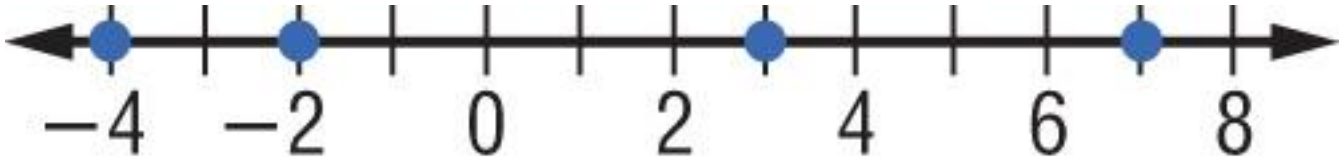
2 **A. Use the integers graphed on the number line below for each question. Write two inequalities involving 7 and –4.**



Answer: Since 7 is to the right of –4, write $7 > -4$.
Since –4 is to the left of 7, write $-4 < 7$.

EXAMPLE Compare Two Integers

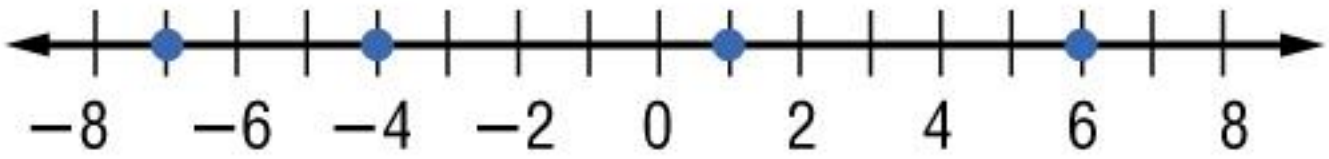
2 **B. Use the integers graphed on the number line below for each question. Replace the • with <, >, or = in –2 • 3 to make a true sentence.**



Answer: –2 is less since it lies to the left of 3.
So write –2 **<** 3.

CHECK Your Progress

2 **A. Use the integers graphed on the number line below for each question. Write two inequalities involving –4 and 1.**



A. $-4 < 1, 1 > -4$

B. $-4 < 1, 1 < -4$

C. $-4 > 1, 1 > -4$

D. $-4 > 1, 1 < -4$

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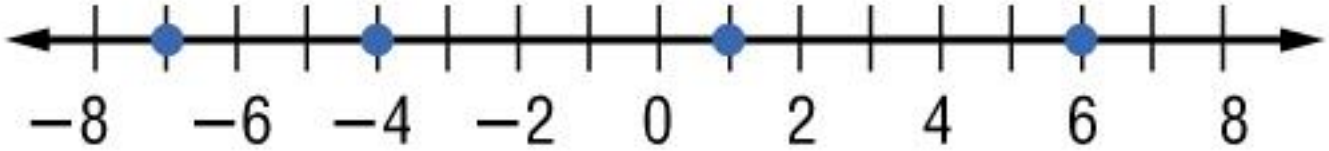
A B C D

CheckPoint

CHECK Your Progress

2 **B. Use the integers graphed on the number line below for each question. Replace the • with <, >, or = in 6 • –7 to make a true sentence.**



A. <

B. >

C. =

D. none of the above

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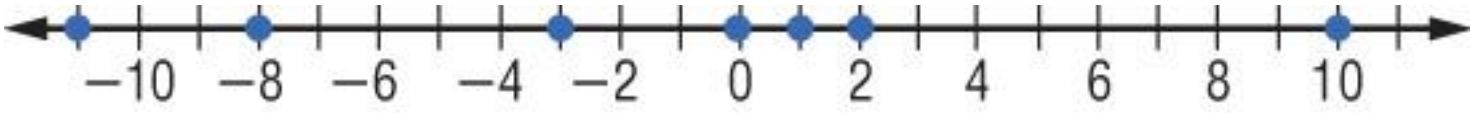
A B C D

CheckPoint

Real-World EXAMPLE

3 **WEATHER** **The high temperatures for the first seven days of January were –8°, 10°, 2°, –3°, –11°, 0°, and 1°. Order the temperatures from least to greatest.**

Graph each integer on a number line.



Write the numbers as they appear from left to right.

Answer: The temperatures –11°, –8°, –3°, 0°, 1°, 2°, 10° are in order from least to greatest.

CHECK Your Progress

3 **FOOTBALL** The yards gained during the first six plays of the football game were 5, –3, 12, –9, 6, and –1. Order the yards from least to greatest.

A. –1, –3, 5, 6, –9, 12

0%

B. 12, 6, 5, –1, –3, –9

C. 5, 6, 12, –9, –3, –1

A B C D

D. –9, –3, –1, 5, 6, 12

CheckPoint

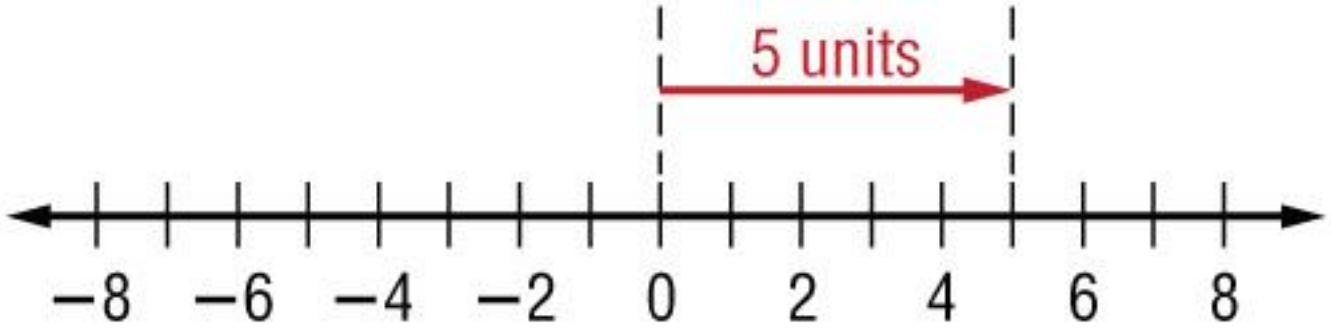
KEY CONCEPT — Abolute Value

Words The absolute value of a number is the distance the number is from zero on the number line. The absolute value of a number is always greater than or equal to zero.

Examples $|5| = 5$ $|-5| = 5$

EXAMPLE 4 Expressions with Absolute Value

A. Evaluate |5|.



|5| = 5 The graph of 5 is 5 units from 0.

Answer: 5

EXAMPLE 4 Expressions with Absolute Value

B. Evaluate |–8| + |–1|.

$\lvert -8 \rvert + \lvert -1 \rvert = 8 + 1$	The absolute value of –8 is 8. The absolute value of –1 is 1.
$= 9$	Simplify.

Answer: 9

CHECK Your Progress

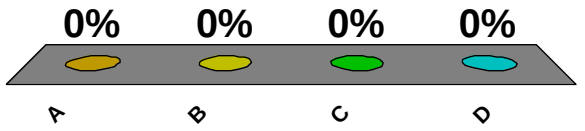
4 **A. Evaluate |–9|.**

A. –9

B. 9

C. $-\frac{1}{9}$

D. $\frac{1}{9}$



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CHECK Your Progress

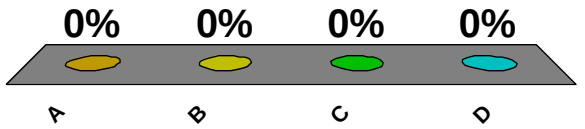
4 **B.** Evaluate |–9| + |2|.

A. 7

B. –7

C. 11

D. –11



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EXAMPLE Algebraic Expressions with Absolute Value

5 ALGEBRA Evaluate $|x| - 8$ if $x = -2$.

$|x| - 8 = |-2| - 8$ Replace x with -2.

$= 2 - 8$ The absolute value of -2 is 2.

$= -6$ Simplify.

Answer: -6

CHECK Your Progress

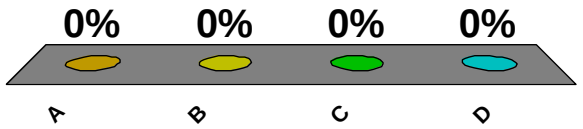
5 **ALGEBRA** Evaluate $5 - |x|$ if $x = 9$.

A. 14

B. 4

C. –14

D. –4



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End of the Lesson

Click the mouse button to return to the Chapter Menu.

Lesson Menu

Main Ideas

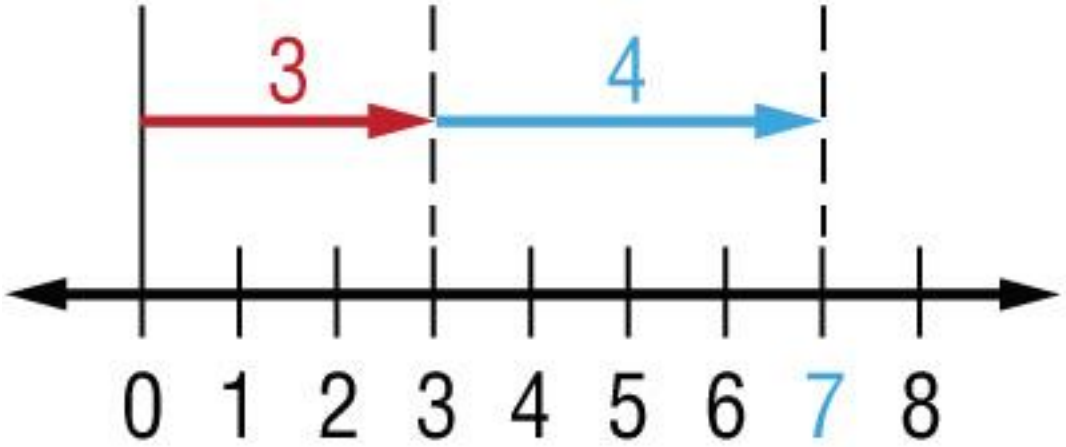
- Add two Integers.
- Add more than two integers.

New Vocabulary

- opposites
- additive inverse

EXAMPLE Add Integers on a Number Line

1 **Find 3 + 4.**



Start at zero.

Move three units to the right.

From there, move four more units to the right.

Answer: 3 + 4 = 7

CHECK Your Progress

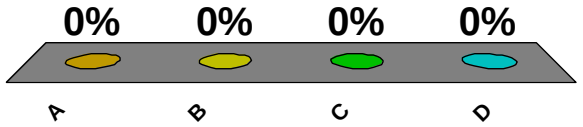
1 Find –2 + –5.

A. 7

B. –7

C. 3

D. –3



CheckPoint

KEY CONCEPT — Adding Integers with the Same Sign

Words To add integers with the same sign, add their absolute values. The sum is:

- positive if both integers are positive.
- negative if both integers are negative.

Examples $-5 + (-2) = -7$ $6 + 3 = 9$

EXAMPLE Add Integers with the Same Sign

2 **Find –5 + (–4).**

–5 + (–4) = –9 Add |–5| and |–4|. Both numbers are negative, so the sum is negative.

Answer: –9

CHECK Your Progress

2 Find –3 + –8.

A. 5

B. –5

C. 11

D. –11

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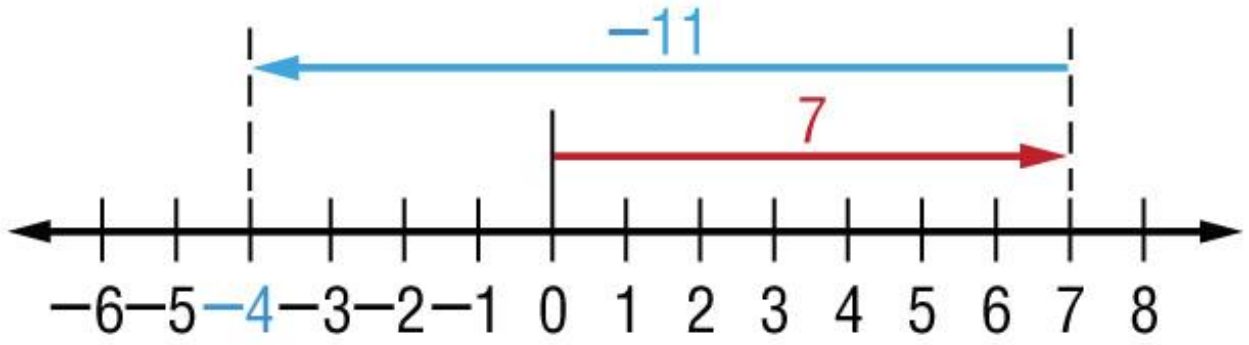
A B C D

CheckPoint

EXAMPLE 3 Add Integers on a Number Line

A. Find 7 + (–11).



Start at zero.

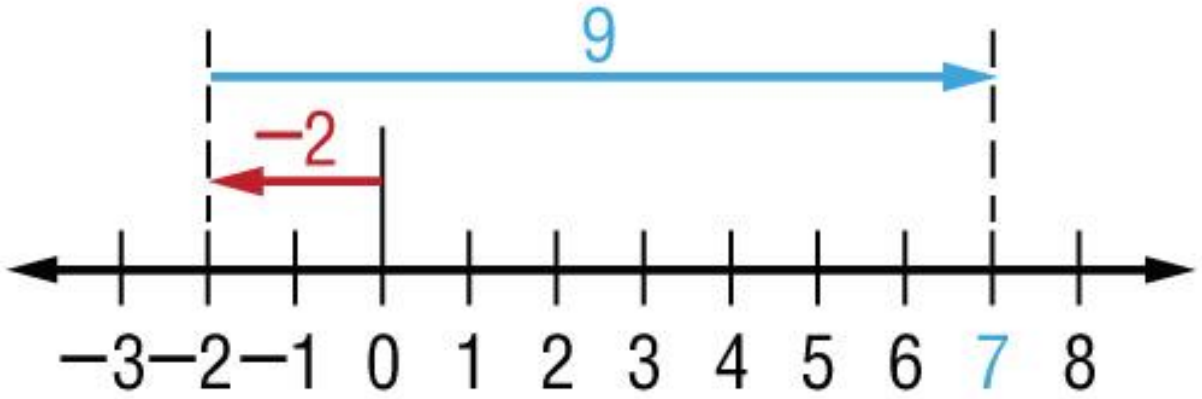
Move 7 units to the right.

From there, move 11 units to the left.

Answer: 7 + (–11) = –4

EXAMPLE Add Integers on a Number Line

3 B. Find –2 + 9.



Start at zero.

Move 2 units to the left.

From there, move 9 units to the right.

Answer: –2 + 9 = 7

CHECK Your Progress

3 **A. Find –5 + 8.**

A. 13

B. –13

C. 3

D. –3

0%

A B C D

CHECK Your Progress

3 **B.** Find 3 + (–6).

A. 3

B. –3

C. 9

D. –9

0%

A B C D

CheckPoint

KEY CONCEPT — Adding Integers with Different Signs

To add integers with different signs, subtract their absolute values. The sum is:

- positive if the positive integer's absolute value is greater.
- negative if the negative integer's absolute value is greater.

EXAMPLE Add Integers with Different Signs

4 A. Find –9 + 10.

–9 + 10 = 1

To find –9 + 10, subtract |9| from |10|. The sum is positive because |10| > |9|.

Answer: 1

EXAMPLE 4 Add Integers with Different Signs

B. Find 8 + (–15).

8 + (–15) = –7 To find 8 + (–15), subtract |8| from |–15|. The sum is negative because |–15| > |8|.

Answer: –7

CHECK Your Progress

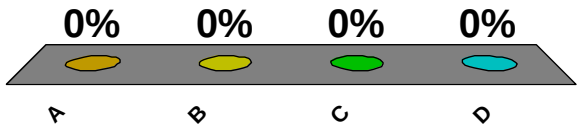
4 **A. Find –6 + 11.**

A. 5

B. –5

C. 17

D. –17



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CHECK Your Progress

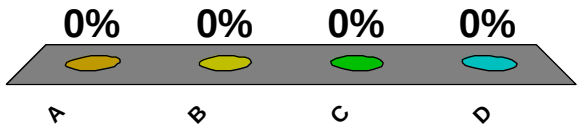
4 **B.** Find 4 + (–7).

A. 11

B. –11

C. 3

D. –3



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Real-World EXAMPLE

5 **WEATHER** **On February 1, the temperature at dawn was –22°F. By noon, it had risen 19 degrees. What was the temperature at noon?**

Words The temperature at dawn was –22°F. It had risen 19 degrees by noon. What was the temperature at noon?

Variable Let x = the temperature at noon.

	Temperature at dawn	plus	increase by noon	equals	temperature at noon.
Equation	–22	+	19	=	x

Real-World EXAMPLE

5 **Solve the equation.**

$-22 + 19 = x$ To find the sum, subtract $|19|$ from $|-22|$.

$-3 = x$ The sum is negative because $|-22| > |19|$.

Answer: The temperature at noon was –3°F.

CHECK Your Progress

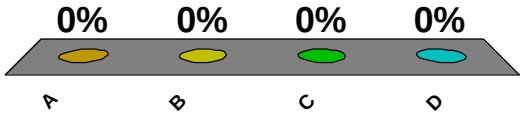
5 **HIKING** Dave started his hike at 32 feet below sea level. During the hike he gained an altitude of 29 feet. At what altitude did Dave complete his hike?

A. 3 feet above sea level

B. 3 feet below sea level

C. 61 feet above sea level

D. 61 feet below sea level



CheckPoint

KEY CONCEPT — Additive Inverse Property

Words The sum of any number and its additive inverse is zero.

Symbols $x + (-x) = 0$

Example $6 + (-6) = 0$

EXAMPLE Add Three or More Integers

6 A. Find –8 + (–4) + 8.

–8 + (–4) + 8 =	–8 + 8 + (–4)	Commutative Property
	= 0 + (–4)	Additive Inverse Property
	= –4	Identity Property of Addition

Answer: –4

EXAMPLE 6 Add Three or More Integers

B. Find 6 + (–3) + (–9) + 2.

$6 + (-3) + (-9) + 2 = 6 + 2 + (-3) + (-9)$	Commutative Property
$= [6 + 2] + [-3 + (-9)]$	Associative Property
$= 8 + (-12)$ or -4	Simplify.

Answer: –4

CHECK Your Progress

6 **A.** Find 3 + (–9) + (–3).

A. –9

B. –3

C. 3

D. 15

0%

A B C D

CHECK Your Progress

6 B. Find –2 + 11 + (–4) + 5.

A. –22

B. –8

C. 0

D. 10

0%

A B C D

End of the Lesson

Click the mouse button to return to the Chapter Menu.

Lesson Menu

Main Ideas

- Subtract Integers.
- Evaluate expressions containing variables.

KEY CONCEPT — Subtracting Integers

Words To subtract an integer, add its additive inverse.

Symbols $a - b = a + (-b)$

Concepts in MOtion

BrainPOP:
Adding and Subtracting Integers

Click here to view!

EXAMPLE Subtract a Positive Integer

1 A. Find 9 – 14.

$9 - 14 = 9 + (-14)$ To subtract 14, add –14.

$= -5$ Simplify.

Answer: –5

EXAMPLE 1 Subtract a Positive Integer

B. Find –10 – 8.

$$-10 - 8 = -10 + (-8) \qquad \text{To subtract 8, add } -8.$$

$$= -18 \qquad \text{Simplify.}$$

Answer: –18

CHECK Your Progress

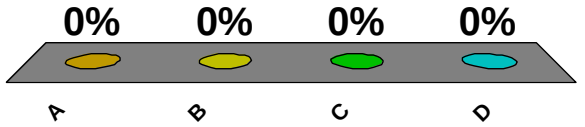
1 **A. Find 6 – 8.**

A. 2

B. –2

C. –3

D. 14



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CHECK Your Progress

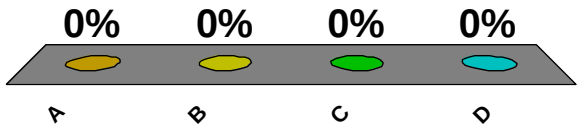
1 **B. Find –9 – 13.**

A. –22

B. –4

C. 4

D. 22



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EXAMPLE 2 Subtract a Negative Integer

A. Find 15 – (–4).

$15 - (-4) = 15 + 4$ To subtract –4, add 4.

$= 19$ Simplify.

Answer: 19

EXAMPLE 2 Subtract a Negative Integer

B. Find –11 – (–7).

$$-11 - (-7) = -11 + 7 \quad \text{To subtract } -7\text{, add } 7.$$

$$= -4 \quad \text{Simplify.}$$

Answer: –4

CHECK Your Progress

2 **A. Find 8 – (–2).**

A. 6

B. 10

C. –6

D. 16

0%

A B C D

CheckPoint

CHECK Your Progress

2 B. Find –12 – (–5).

A. 17

B. 7

C. –17

D. –7

0%

A B C D

CheckPoint

Real-World EXAMPLE

3 **WEATHER** The table shows the record high and low temperatures recorded in selected states. What is the range of temperatures for West Virginia?

State	Lowest Temperature (°F)	Highest Temperature (°F)
Utah	−69	117
Vermont	−50	105
Virginia	−30	110
Washington	−48	118
West Virginia	−37	112

Source: *The World Almanac*

Real-World EXAMPLE

3

Explore You know the highest and lowest temperatures. You need to find the range for West Virginia's temperatures.

Plan To find the range, or difference, subtract the lowest temperature from the highest temperature.

Solve

$112 - (-37) = 112 + 37$ To subtract –37, add 37.

$= 149$ Add 112 and 37.

Answer: The range for West Virginia is 149°F.

Real-World EXAMPLE

3 Examine

Think of a thermometer. The difference between 112° above zero and 37° below zero must be 112° + 37° or 149°. The answer appears to be reasonable.

CHECK Your Progress

3 **WEATHER** The table shows the record high and low temperatures recorded in selected states. What is the range for Washington?

State	Lowest Temperature (°F)	Highest Temperature (°F)
Utah	−69	117
Vermont	−50	105
Virginia	−30	110
Washington	−48	118
West Virginia	−37	112

Source: *The World Almanac*

A. 75°F

B. 70°F

C. 166°F

D. 149°F

0%

A B C D

EXAMPLE 4 Evaluate Algebraic Expressions

A. Evaluate m – (–2) if $m = 4$.

$m - (-2)$	$= 4 - (-2)$	Write the expression. Replace m with 4.
	$= 4 + 2$	To subtract –2, add 2.
	$= 6$	Add 4 and 2.

Answer: 6

EXAMPLE 4 Evaluate Algebraic Expressions

B. Evaluate $x - y$ if $x = -14$ and $y = -2$.

$x - y = -14 - (-2)$	Write the expression. Replace x with –14 and y with –2.
$= -14 + 2$	To subtract –2, add 2.
$= -12$	Add –14 and 2.

Answer: –12

CHECK Your Progress

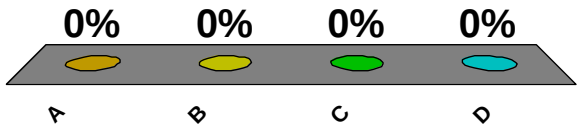
4 **A. Evaluate $p - (-6)$ if $p = -4$.**

A. 10

B. –2

C. 2

D. –10



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CHECK Your Progress

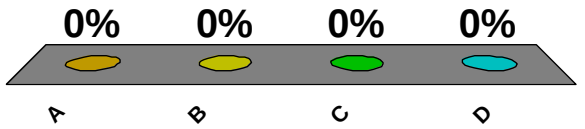
4 **B.** Evaluate $m - n$ if $m = -9$ and $n = -3$.

A. –12

B. –6

C. 6

D. –27



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End of the Lesson

Click the mouse button to return to the Chapter Menu.

Lesson Menu

Main Ideas

- Multiply integers.
- Simplify algebraic expressions.

KEY CONCEPT — *Multiplying Integers with Different Signs*

Words The product of two integers with different signs is negative.

Examples $4(-3) = -12$ $-3(4) = -12$

EXAMPLE Multiply Integers with Different Signs

1 A. Find 8(–9).

8(–9) = –72 The factors have different signs. The product is negative.

Answer: –72

EXAMPLE 1 Multiply Integers with Different Signs

B. Find –9(11).

–9(11) = –99 The factors have different signs. The product is negative.

Answer: –99

CHECK Your Progress

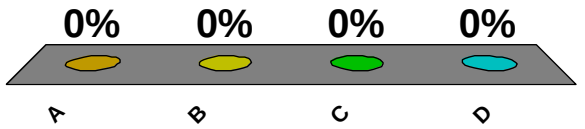
1 **A. Find –4(12).**

A. –3

B. –46

C. 48

D. –48



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CHECK Your Progress

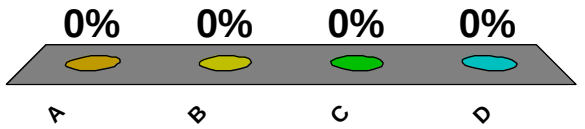
1 **B. Find 6(–2).**

A. 12

B. –12

C. –3

D. –8



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KEY CONCEPT — Multiplying Integers with the Same Sign

Words The product of two integers with the same sign is positive.

Examples $4(3) = 12$ $-4(-3) = 12$

EXAMPLE 2 Multiply Integers with the Same Sign

A. Find –4(–16).

–4(–16) = 64 The factors have the same sign. The product is positive.

Answer: 64

EXAMPLE 2 Multiply Integers with the Same Sign

B. Find –9(–3)(–2).

$$-9(-3)(-2) = [(-9)(-3)](-2) \qquad \text{Associative Property}$$
$$= (27)(-2) \qquad (-9)(-3) = 27$$
$$= -54 \qquad (27)(-2) = -54$$

Answer: –54

CHECK Your Progress

2 A. Find –3(–8).

A. 24

B. –24

C. –11

D. 23

0%

A B C D

CheckPoint

CHECK Your Progress

2 **B.** Find –7(11)(–4).

A. 0

B. –81

C. 308

D. –308

0%

A B C D

CheckPoint

Standardized Test EXAMPLE

3 **A student missed only 4 problems on a test, each worth 20 points. What integer represents the total number of points earned for those questions?**

A –5

B –20

C 24

D –80

Read the Test Item

The word *missed* means losing points, so the loss per problem is –20. Multiply 4 times –20 to find the total number of points lost.

Standardized Test EXAMPLE

3 Solve the Test Item

4(–20) = –80 The product is negative.

Answer: The answer is D.

CHECK Your Progress

3 **FOOTBALL** A football team loses 3 yards on each of 3 consecutive plays. Find the total yards lost.

A. –3

B. 6

C. –9

D. 9

0%

A B C D

CheckPoint

EXAMPLE 4 Simplify and Evaluate Algebraic Expressions

A. Simplify $8a(-5b)$.

$$8a(-5b) = (8)(a)(-5)(b)$$

$$= (8 \bullet -5)(a \bullet b) \quad \text{Commutative Property of Multiplication}$$

$$= -40ab \quad (8 \bullet -5) = -40,\ a \bullet b = ab$$

Answer: $-40ab$

EXAMPLE 4 Simplify and Evaluate Algebraic Expressions

B. Evaluate $-3xy$ if $x = -4$ and $y = 9$.

$-3xy = -3(-4)(9)$	Replace x with -4 and y with 9.
$= [-3(-4)](9)$	Associative Property of Multiplication
$= 12(9)$	The product of -3 and -4 is positive.
$= 108$	The product of 12 and 9 is positive.

Answer: 108

CHECK Your Progress

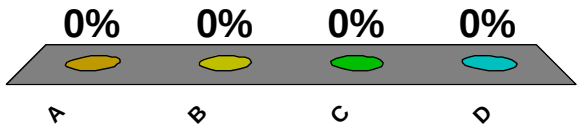
4 **A. Simplify –6(2*c*).**

A. 12*c*

B. –12*c*

C. 8*c*

D. –8*c*



CheckPoint

CHECK Your Progress

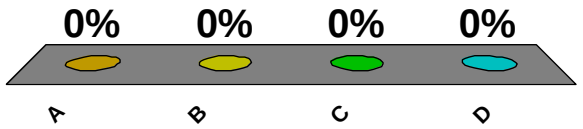
4 **B.** Simplify $5m(-7n)$.

A. $-2mn$

B. $-12mn$

C. $35mn$

D. $-35mn$



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CHECK Your Progress

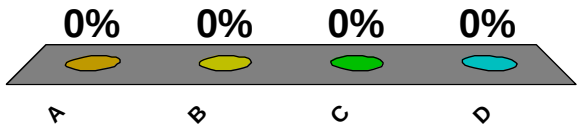
4 **C. Evaluate $-9ab$ if $a = -3$ and $b = -6$.**

A. 81

B. 162

C. –162

D. –81



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End of the Lesson

Click the mouse button to return to the Chapter Menu.

Lesson Menu

Main Ideas

- Divide Integers.
- Find the average of a set of data.

New Vocabulary

- mean

KEY CONCEPT — Dividing Integers with the Same Sign

Words The quotient of two integers with the same sign is positive.

Examples $-12 \div (-3) = 4$ $12 \div 3 = 4$

EXAMPLE Divide Integers with the Same Sign

1 A. Find –28 ÷ (–4).

–28 ÷ (–4) = 7 The quotient is positive.

Answer: 7

EXAMPLE 1 Divide Integers with the Same Sign

B. Find $\frac{96}{8}$.

$$\frac{96}{8} = 96 \div 8$$

The quotient is positive.

$$= 12$$

Answer: 12

CHECK Your Progress

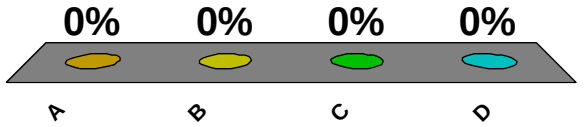
1 A. Find 35 ÷ 7.

A. 5

B. 6

C. 28

D. 42



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CHECK Your Progress

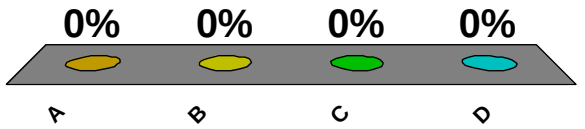
1 B. Find $\frac{-36}{-4}$.

A. 9

B. –8

C. –32

D. –9



CheckPoint

KEY CONCEPT — Dividing Integers with Different Signs

Words The quotient of two integers with different signs is negative.

Examples $-12 \div 4 = -3$ $12 \div (-4) = -3$

EXAMPLE 2 Divide Integers with Different Signs

A. Find 54 ÷ (–3).

54 ÷ (–3) = –18 The quotient is negative.

Answer: –18

EXAMPLE Divide Integers with Different Signs

2 B. Find $\frac{-42}{6}$.

$\frac{-42}{6} = -42 \div 6$ The quotient is negative.

$= -7$ Simplify.

Answer: -7

CHECK Your Progress

2 **A. Find 72 ÷ (–8).**

A. 9

B. –9

C. –8

D. 7

0%

A B C D

CheckPoint

CHECK Your Progress

2 B. Find $\frac{-36}{4}$.

A. –9

B. 9

C. –32

D. –7

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A B C D

CheckPoint

EXAMPLE Evaluate Algebraic Expressions

3 **Evaluate $6x \div y$, if $x = -4$ and $y = -8$.**

$6x \div y = 6(-4) \div (-8)$ Replace x with -4 and y with -8.

$= -24 \div (-8)$ Simplify.

$= 3$

Answer: 3

CHECK Your Progress

3 Evaluate $-4m \div n$ if $m = -9$ and $n = -3$.

A. –12

B. –16

C. 12

D. 33

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A B C D

CheckPoint

Real-World EXAMPLE

4 **EXAM SCORE** **Ian had exam scores of 89, 98, 96, 97, and 95. Find the mean (average) of his exam scores.**

$$\frac{89+98+96+97+95}{5} = \frac{475}{5}$$ Find the sum of the quiz scores. Divide by the number in the set.

$$= 95$$ Simplify.

Answer: The average of Ian's exam scores is 95.

CHECK Your Progress

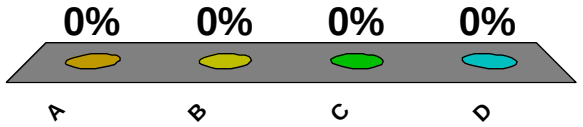
4 Kyle had test scores of 89, 82, 85, 93, and 96. Find the mean (average) of his test scores.

A. 85

B. 89

C. 93

D. 96



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CONCEPT SUMMARY — Operations with Integers

Words	Examples	
Adding Two Integers To add integers with the same sign, add their absolute values. Give the result the same sign as the integers.	$-5 + (-4) = -9$	$5 + 4 = 9$
To add integers with different signs, subtract their absolute values. Give the result the same sign as the integer with the greater absolute value.	$-5 + 4 = -1$	$5 + (-4) = 1$
Subtracting Two Integers To subtract an integer, add its additive inverse.	$5 - 9 = 5 + (-9)$ or -4 $5 - (-9) = 5 + 9$ or 14	
Multiplying Two Integers The product of two integers with the same sign is positive.	$5 \cdot 4 = 20$	$-5 \cdot (-4) = 20$
The product of two integers with different signs is negative.	$-5 \cdot 4 = -20$	$5 \cdot (-4) = -20$
Dividing Two Integers The quotient of two integers with the same sign is positive.	$20 \div 5 = 4$	$-20 \div (-5) = 4$
The quotient of two integers with different signs is negative.	$-20 \div 5 = -4$	$20 \div (-5) = -4$

End of the Lesson

Click the mouse button to return to the Chapter Menu.

Lesson Menu

Main Ideas

- Graph points on a coordinate plane.
- Graph algebraic relationships.

New Vocabulary

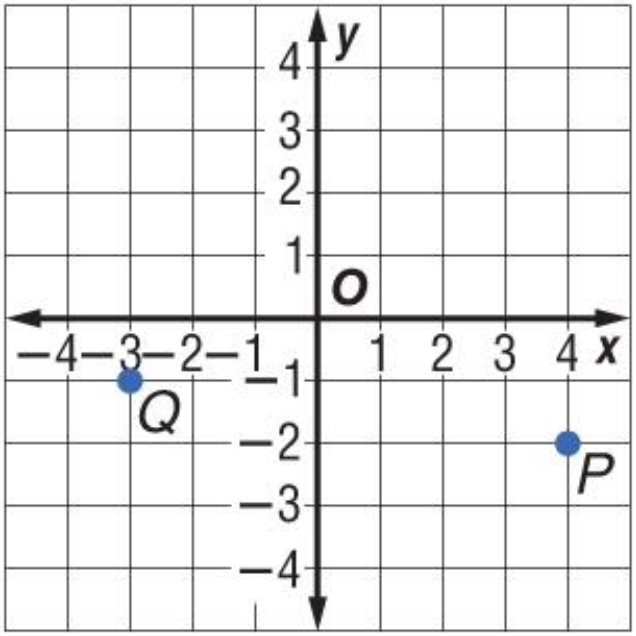
- quadrants

EXAMPLE 1 Write Ordered Pairs

A. Write the ordered pair that names the point *P*.

The *x*-coordinate is 4.

The *y*-coordinate is –2.



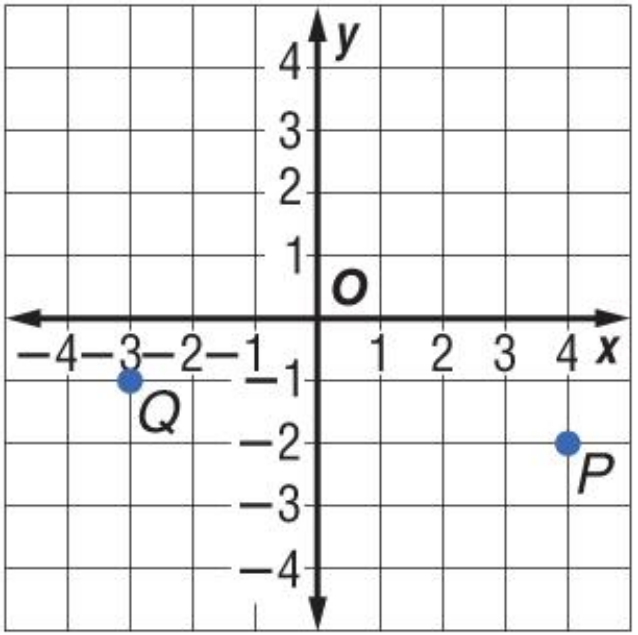
Answer: The ordered pair is (4, –2).

EXAMPLE 1 Write Ordered Pairs

B. Write the ordered pair that names the point *Q*.

The *x*-coordinate is –3.

The *y*-coordinate is –1.



Answer: The ordered pair is (–3, –1).

CHECK Your Progress

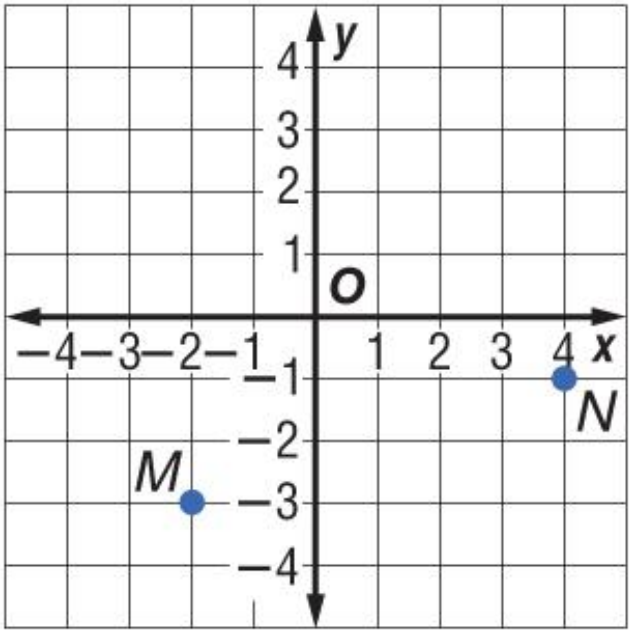
1 A. Write the ordered pair that names the point *M*.

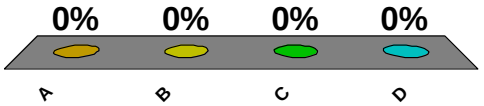
A. (2, 3)

B. (–3, –2)

C. (–2, –3)

D. (–3, 2)





CheckPoint

CHECK Your Progress

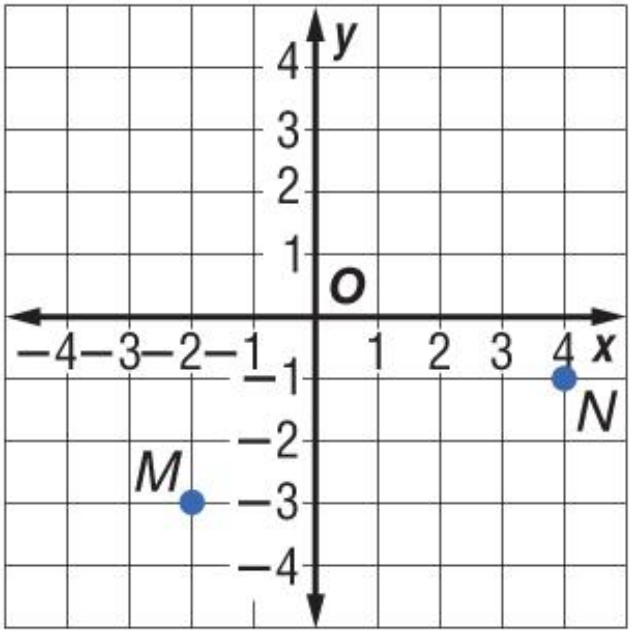
1 **B. Write the ordered pair that names the point *N*.**

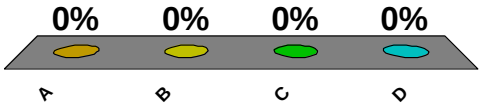
A. (4, –1)

B. (4, 1)

C. (1, –4)

D. (–1, 4)





CheckPoint

EXAMPLE Graph Points and Name the Quadrant

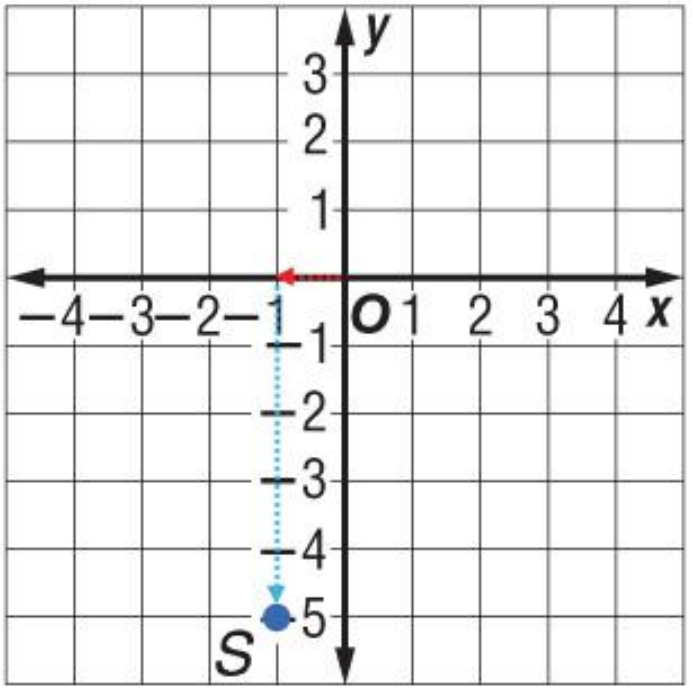
2 A. Graph and label *S*(–1, –5) on a coordinate plane. Name the quadrant in which the point lies.

Start at the origin.

Move 1 unit left.

Then move 5 units down and draw a dot.

Answer: Point *S* is in Quadrant III.



Concepts in Motion
Interactive Lab:
The Coordinate System
Click here to view!

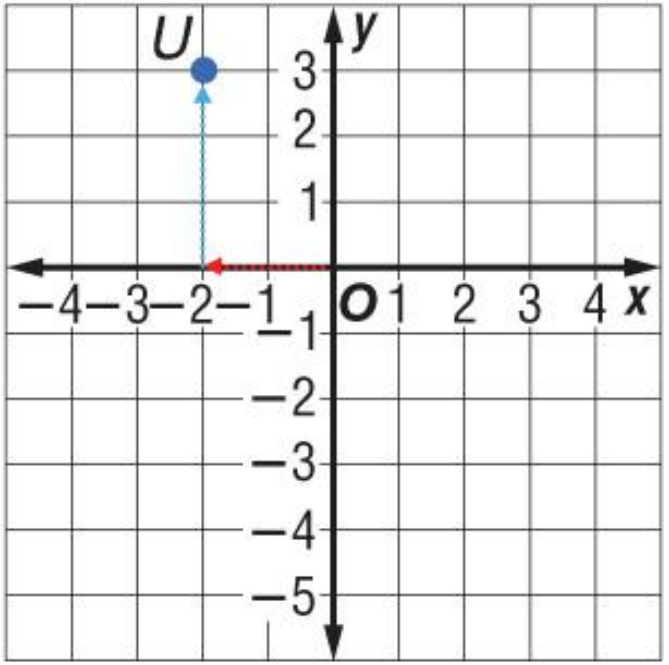
EXAMPLE Graph Points and Name the Quadrant

2 B. Graph and label *U*(–2, 3) on a coordinate plane. Name the quadrant in which the point lies.

Start at the origin.

Move 2 units left.

Then move 3 units up and draw a dot.



Answer: Point *U* is in Quadrant II.

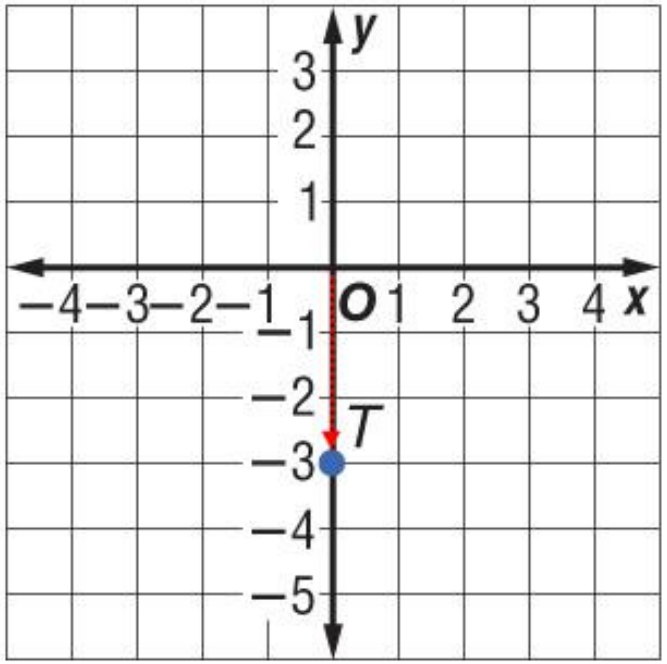
EXAMPLE Graph Points and Name the Quadrant

2 C. Graph and label *T*(0, –3) on a coordinate plane. Name the quadrant in which the point lies.

Start at the origin.

Since the *x*-coordinate is 0, the point lies on the *y*-axis.

Move 3 units down and draw a dot.



Answer: Point *T* is not in any quadrant.

CHECK Your Progress

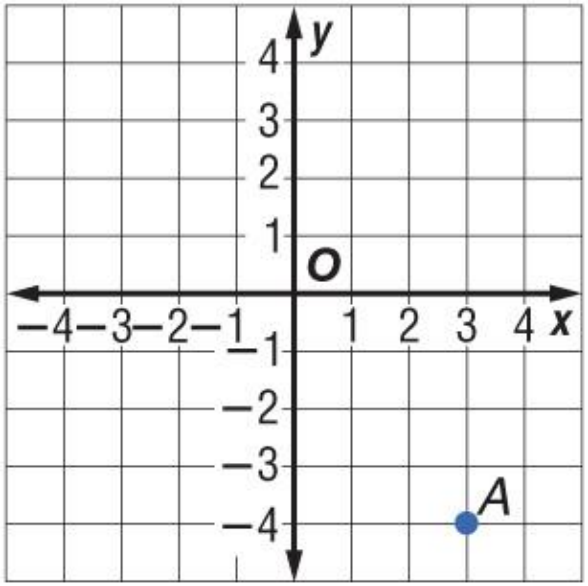
2 **A. Graph and label *A* (3, –4) on a coordinate plane. Name the quadrant in which the point lies.**

A. Quadrant I

B. Quadrant II

C. Quadrant III

D. Quadrant IV



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A B C D

CheckPoint

CHECK Your Progress

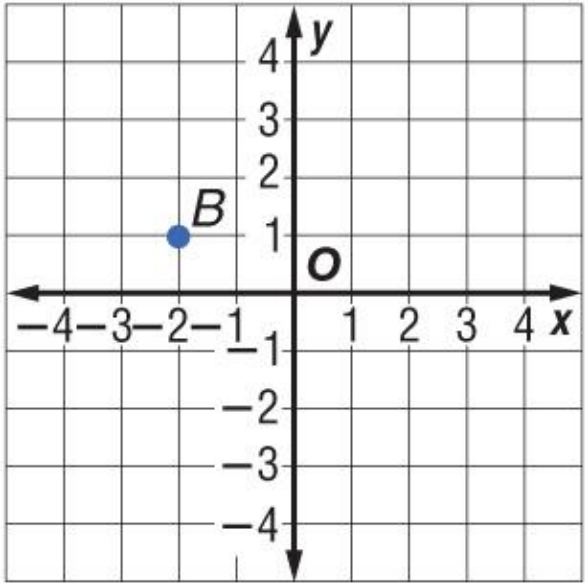
2 **B. Graph and label *B* (–2, 1) on a coordinate plane. Name the quadrant in which the point lies.**

A. Quadrant I

B. Quadrant II

C. Quadrant III

D. Quadrant IV



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A B C D

CheckPoint

CHECK Your Progress

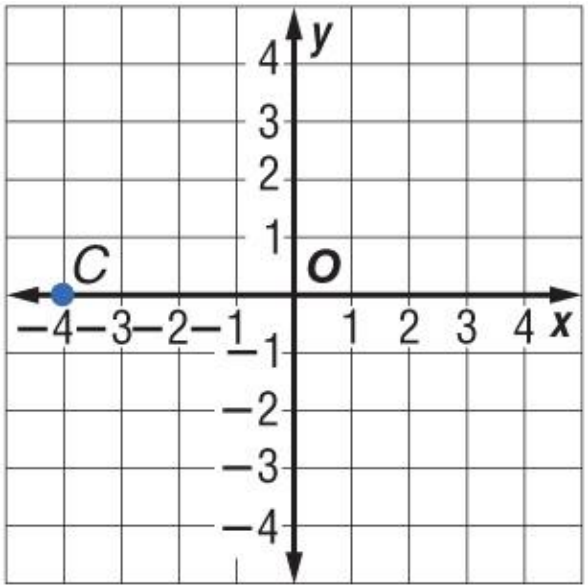
2 **C. Graph and label *C* (–4, 0) on a coordinate plane. Name the quadrant in which the point lies.**

A. Quadrant I

B. Quadrant II

C. Quadrant III

D. not in any quadrant



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A B C D

CheckPoint

EXAMPLE Graph an Algebraic Relationship

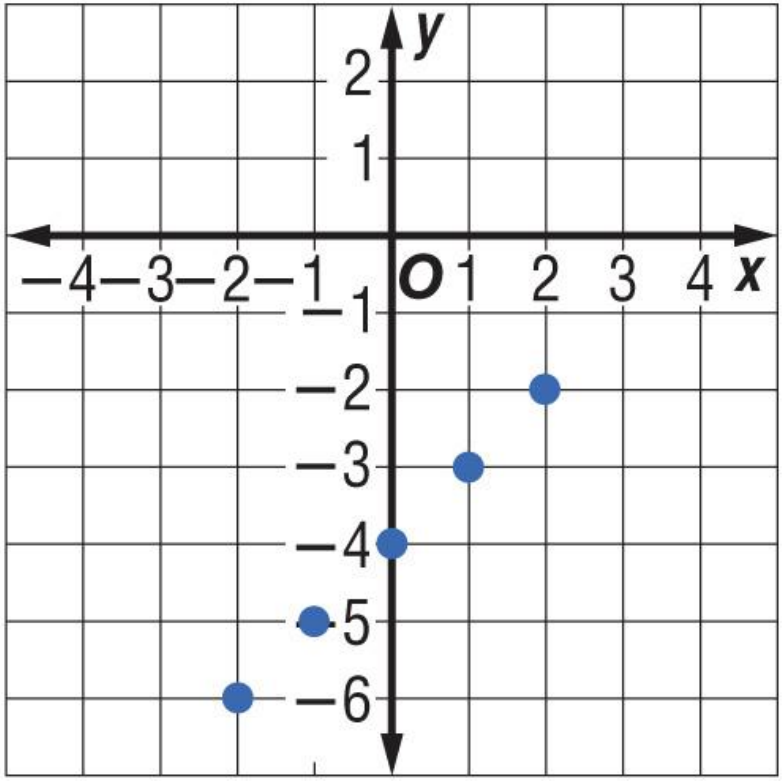
3 **The difference between two integers is 4. If *x* represents the first integer and *y* represents the second integer, make a table of possible values for *x* and *y*. Then graph the ordered pairs and describe the graph.**

First, make a table. Choose values for *x* and *y* that have a difference of 4.

$x - y = 4$		
x	y	(x, y)
2	−2	(2, −2)
1	−3	(1, −3)
0	−4	(0, −4)
−1	−5	(−1, −5)
−2	−6	(−2, −6)

EXAMPLE Graph an Algebraic Relationship

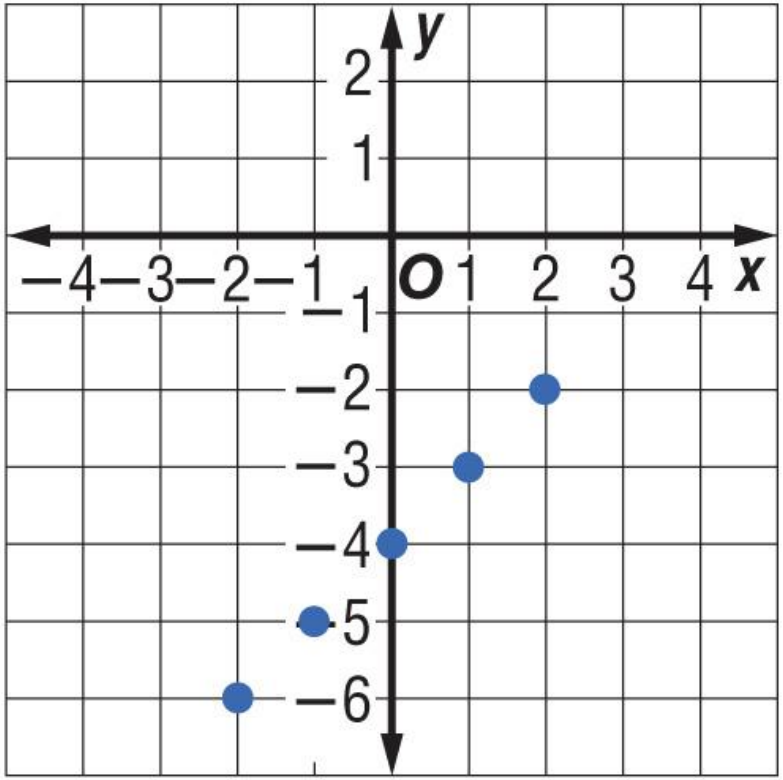
3 Then graph the ordered pairs on a coordinate plane.



$x - y = 4$		
x	y	(x, y)
2	−2	(2, −2)
1	−3	(1, −3)
0	−4	(0, −4)
−1	−5	(−1, −5)
−2	−6	(−2, −6)

EXAMPLE Graph an Algebraic Relationship

3 **Answer:** The points in the graph are on a line that slants upward to the right. The line crosses the *y*-axis at $y = -4$.



$x - y = 4$		
x	y	(x, y)
2	−2	(2, −2)
1	−3	(1, −3)
0	−4	(0, −4)
−1	−5	(−1, −5)
−2	−6	(−2, −6)

CHECK Your Progress

3 **A. The sum of two integers is 3. If *x* represents the first integer and *y* represents the second integer, make a table of possible values for *x* and *y*.**

A.

x	*y*
−3	3
0	3
2	3
3	3

B.

x	*y*
−3	6
0	3
2	1
3	0

C.

x	*y*
−3	0
0	−3
2	−5
3	−6

D.

x	*y*
−3	0
0	3
2	5
3	6

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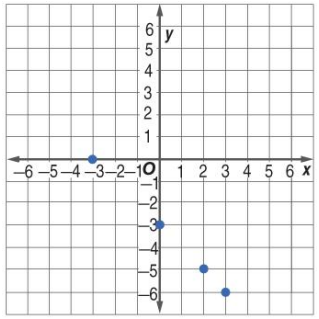
A B C D

CheckPoint

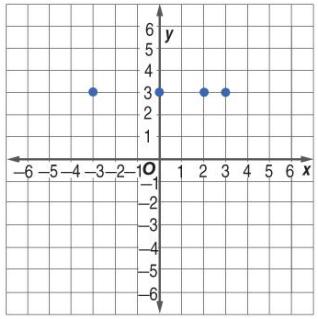
CHECK Your Progress

3 **B. The sum of two integers is 3. If *x* represents the first integer and *y* represents the second integer, graph possible ordered pairs.**

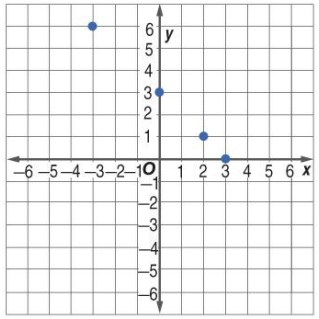
A.



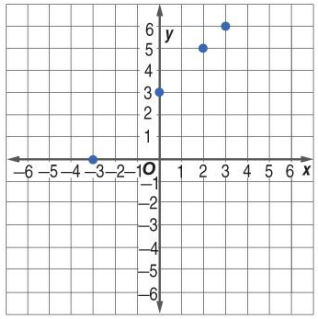
B.



C.



D.



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A B C D

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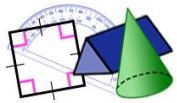
End of the Lesson

Click the mouse button to return to the Chapter Menu.

Chapter Resources Menu

CheckPoint [Five-Minute Checks]

 [Image Bank]

 [Math Tools]

Concepts in Motion

Animation [Multiplying Integers]

Interactive Lab  [The Coordinate System]

BrainPOP [Adding and Subtracting Integers]

Five-Minute CHECK

Lesson 2-1 (over Chapter 1)

Lesson 2-2 (over Lesson 2-1)

Lesson 2-3 (over Lesson 2-2)

Lesson 2-4 (over Lesson 2-3)

Lesson 2-5 (over Lesson 2-4)

Lesson 2-6 (over Lesson 2-5)

Image Bank

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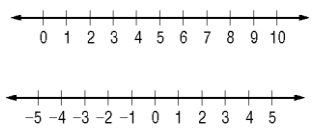
Image Bank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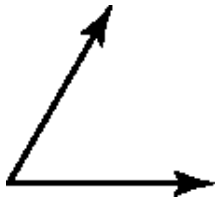
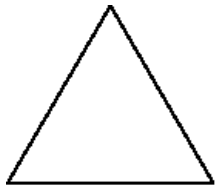
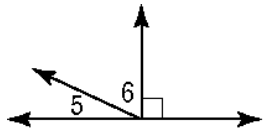
−5 −4 −3 −2 −1 0 1 2 3 4 5



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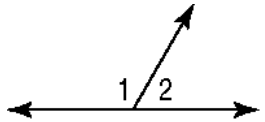
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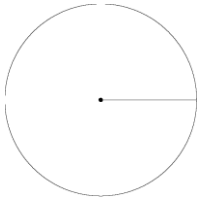

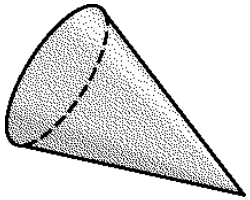

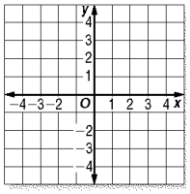
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−2
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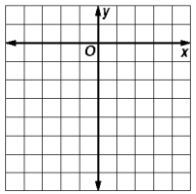
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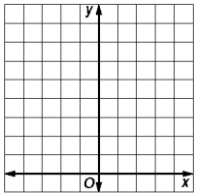
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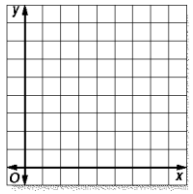
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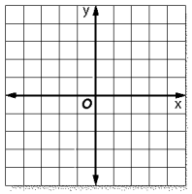
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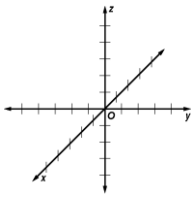
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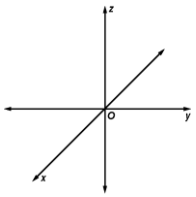
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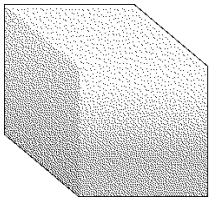

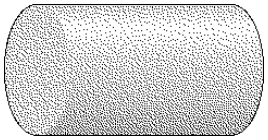

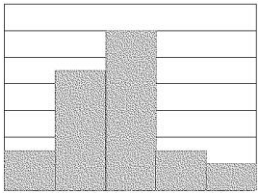

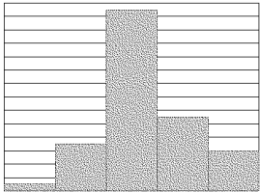

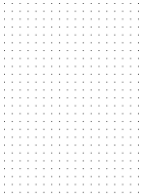

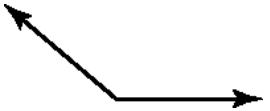

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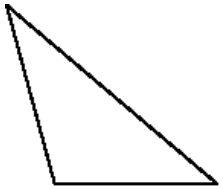

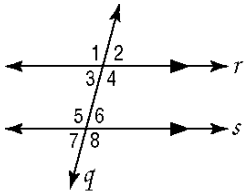

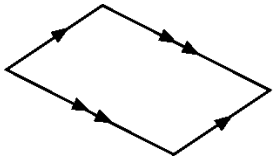

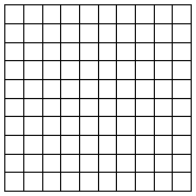

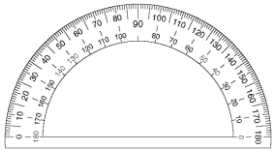

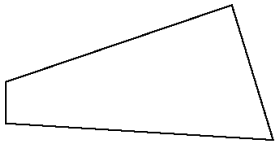

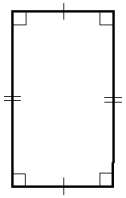

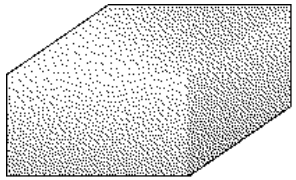

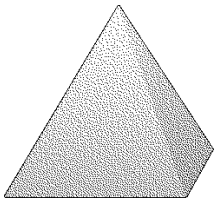

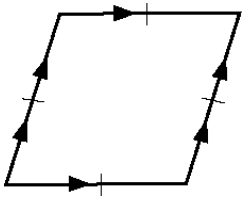

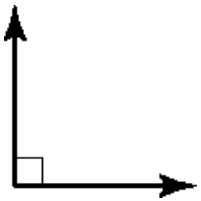

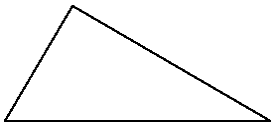

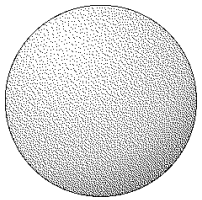

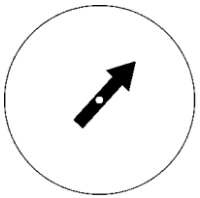

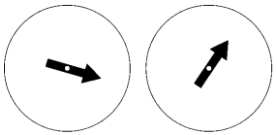

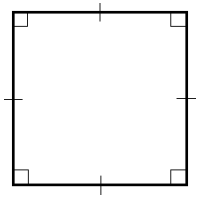

Stem | Leaf

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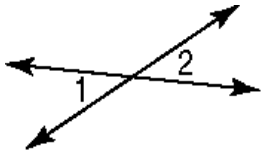
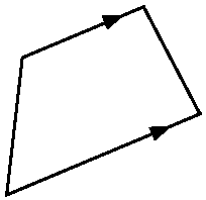
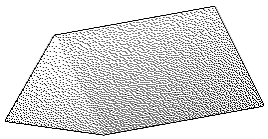
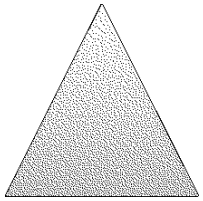
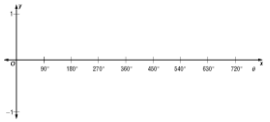
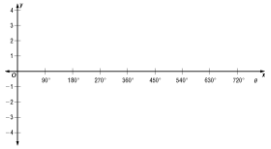


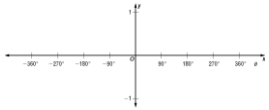


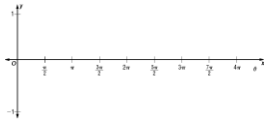


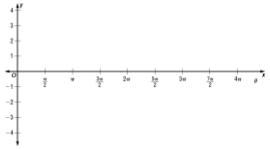












Concepts in Motion Animation

Five-Minute CHECK (over Chapter 1)

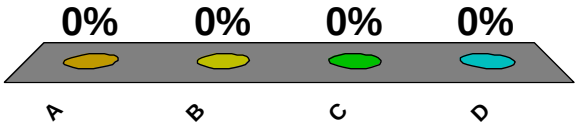
1 Find the value of the expression $\frac{48}{4} - 2 \cdot 3$.

A. 30

B. 24

C. 8

D. 6



CheckPoint

Five-Minute CHECK (over Chapter 1)

2 Find the value of the expression $3(1 + 5) - 4 \bullet 2$.

A. 5

B. 10

C. 25

D. 28

0%

A B C D

CheckPoint

Five-Minute CHECK (over Chapter 1)

3 Evaluate $5b + 2c - 1$ for $b = 3$ and $c = 5$.

A. 24

B. 39

C. 100

D. 124

0%

A B C D

CheckPoint

Five-Minute CHECK (over Chapter 1)

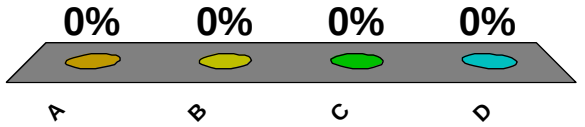
4 Evaluate $a(c - b)$ for $a = 6$, $b = 3$ and $c = 5$.

A. 4

B. 8

C. 12

D. 27



CheckPoint

Five-Minute CHECK (over Chapter 1)

5 Find the next term in the list. 112, 99, 86, 73, 60, …

A. 40

B. 47

C. 50

D. 57

0%

A B C D

CheckPoint

Five-Minute CHECK (over Chapter 1)

Standardized Test Practice

6 **Which sentence does the equation $n - 5 = 10$ represent?**

A. A number is the difference between 10 and 5.

B. Five more than a number is 10.

C. Five less than a number is 10.

D. A number less than 5 is 10.

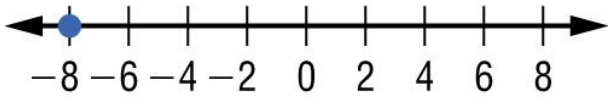
0%

A B C D

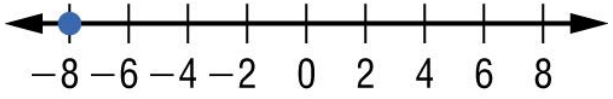
Five-Minute CHECK (over Lesson 2-1)

1 **Which option shows an integer to represent $8 withdrawn from a bank account, and its graph on a number line?**

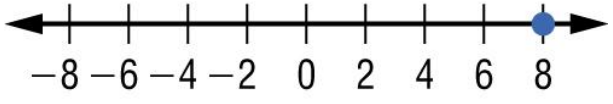
A. 8



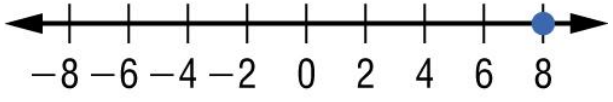
B. –8

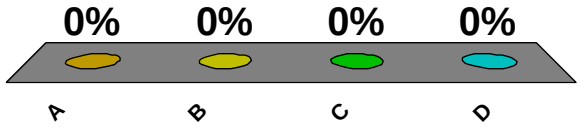


C. –8



D. 8





CheckPoint

Five-Minute CHECK (over Lesson 2-1)

2 Use <, >, or = in –9 ___ –8 to make the sentence true.

A. <

B. >

C. =

0%

A B C

Five-Minute CHECK (over Lesson 2-1)

3 Order the integers {–2, 4, –1, 2, –8} from least to greatest.

A. {4, 2, –8, –2, –1}

0%

B. {–1, –2, 2, 4, –8}

C. {4, 2, –1, –2, –8}

D. {–8, –2, –1, 2, 4}

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-1)

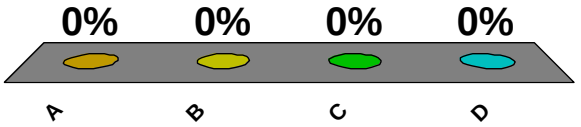
4 Evaluate –| 17 |.

A. 17

B. 0

C. –1

D. –17



CheckPoint

Five-Minute CHECK (over Lesson 2-1)

5 Evaluate $|-8| + |b| + a$ if $a = 0$ and $b = 12$.

A. 20

B. 12

C. –4

D. –20

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-1)

Standardized Test Practice

6 The low temperatures for five days in February are shown in the table. What is the order of these temperatures from greatest to least?

Low Temperatures				
−2°	−4°	0°	5°	−3°

0%

A. 0°, –2°, –3°, –4°, 5°

B. 5°, 0°, –4°, –3°, 2°

C. –4°, –3°, –2°, 0°, 5°

D. 5°, 0°, –2°, –3°, –4°

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-2)

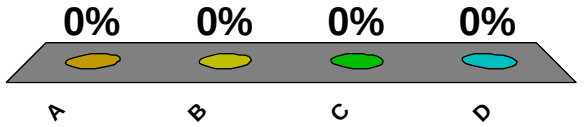
1 Find the sum –4 + (–3).

A. 7

B. 1

C. –1

D. –7



CheckPoint

Five-Minute CHECK (over Lesson 2-2)

2 Find the sum 2 + (–6).

A. –8

B. –4

C. 4

D. 8

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-2)

3 Find the sum –14 + 20.

A. –34

B. –6

C. 6

D. 34

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-2)

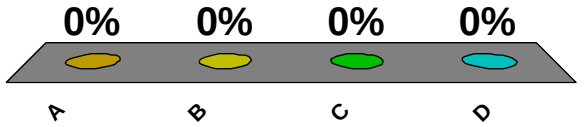
4 Find the sum –1 + 4 + (–12).

A. 17

B. 15

C. –9

D. –17



CheckPoint

Five-Minute CHECK (over Lesson 2-2)

5 Find the sum 10 + 8 + (–8).

A. 26

B. 10

C. –10

D. –26

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-2)

Standardized Test Practice

6 Holly recorded the difference between morning and evening temperatures each day last week in the table shown. Which day had the greatest change in temperature?

Difference in Temperature							
Day	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Change	−6	+5	−4	+3	−4	−1	+4

A. Sun.

B. Mon.

C. Fri.

D. Sat.

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-3)

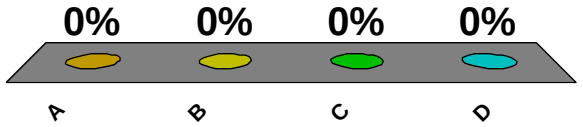
1 Find the difference 9 – (–1).

A. –10

B. –8

C. 8

D. 10



CheckPoint

Five-Minute CHECK (over Lesson 2-3)

2 Find the difference –3 – (–21).

A. 63

B. 24

C. 18

D. 7

0%

A B C D

Five-Minute CHECK (over Lesson 2-3)

3 Find the difference –8 – 3.

A. –11

B. –5

C. 5

D. 11

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-3)

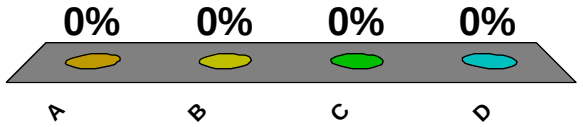
4 Find the difference 12 – 21.

A. –33

B. –9

C. 9

D. 33



CheckPoint

Five-Minute CHECK (over Lesson 2-3)

5 Evaluate $a - b$ if $a = -7$ and $b = 9$.

A. –16

B. –2

C. 2

D. 16

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-3)

Standardized Test Practice

6 When a number is subtracted from 17 the result is 20. What is the number?

A. 3

B. 37

C. –3

D. –37

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-4)

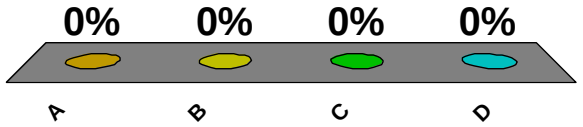
1 Find the product –9 • 8.

A. –72

B. –63

C. –17

D. –1



CheckPoint

Five-Minute CHECK (over Lesson 2-4)

2 Find the product –3(–13).

A. –39

B. –16

C. 10

D. 39

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-4)

3 Find the product –5(–3)(4).

A. –70

B. –60

C. 60

D. 70

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-4)

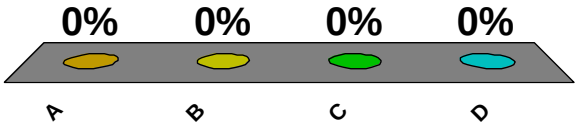
4 Simplify $-2 \cdot (-3y)$.

A. $-6y$

B. $6y$

C. $-5y$

D. y



CheckPoint

Five-Minute CHECK (over Lesson 2-4)

5 Evaluate $-7ab$ for $a = -1$ and $b = 4$.

A. –28

B. –11

C. 11

D. 28

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-4)

Standardized Test Practice

6 What is the next number is the pattern –3, 6, –12, 24, …?

A. 48

0%

B. –48

C. 36

D. –36

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-5)

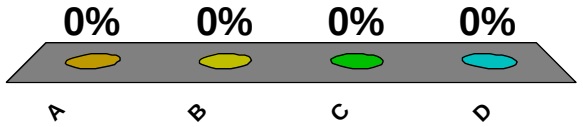
1 Find the quotient $\frac{-45}{-5}$.

A. 40

B. 9

C. –9

D. –50



CheckPoint

Five-Minute CHECK (over Lesson 2-5)

2 Find the quotient $\frac{72}{-12}$.

A. 60

B. 6

C. –6

D. –84

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-5)

3 Find the quotient $\frac{-90}{6}$.

A. –15

B. –12

C. 12

D. 15

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-5)

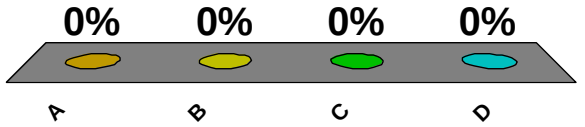
4 Evaluate $\frac{a}{-8}$ if $a = -96$.

A. –88

B. –12

C. 12

D. 88



CheckPoint

Five-Minute CHECK (over Lesson 2-5)

5 Evaluate $\frac{x}{y}$ if $x = -65$ and $y = -5$.

A. –13

B. –11

C. 11

D. 13

0%

A B C D

CheckPoint

Five-Minute CHECK (over Lesson 2-5)

Standardized Test Practice

6 What is the average (mean) of –7, 6, –11, 9, and –2?

A. –1

0%

B. 1

C. –5

D. 7

A B C D

CheckPoint