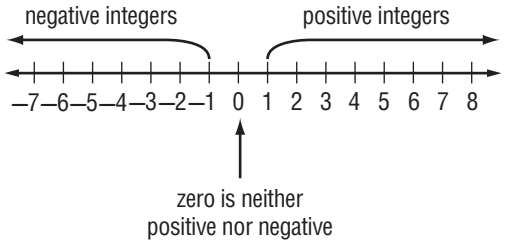
NAME _____ DATE _____ PERIOD _____

Lesson 1 Reteach

Integers and Absolute Value

Integers less than zero are **negative integers.** Integers greater than zero are **positive integers.**



The absolute value of an integer is the distance the number is from zero on a number line. Two vertical bars are used to represent absolute value. The symbol for absolute value of 3 is $|3|$.

Example 1

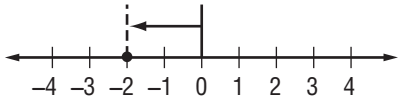
Write an integer that represents 160 feet below sea level.

Because it represents *below* sea level, the integer is -160.

Example 2

Evaluate $|-2|$.

On the number line, the point -2 is 2 units away from 0. So, $|-2| = 2$.



Exercises

Write an integer for each situation.

1. 12°C above zero

2. a loss of $24

3. a gain of 20 pounds

4. falling 6 feet

Evaluate each expression.

5. $|12|$

6. $|-150|$

7. $|-8| + 2$

8. $|6| + |5|$

9. $|-19| - 17$

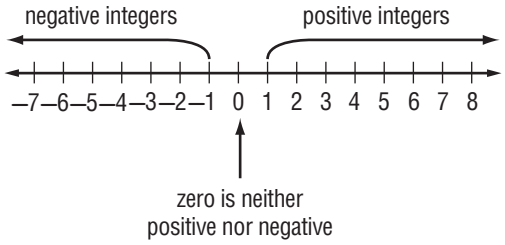
10. $|84| - |-62|$

NAME _____ DATE _____ PERIOD _____

Lesson 1 Reteach

Integers and Absolute Value

Integers less than zero are **negative integers.** Integers greater than zero are **positive integers.**



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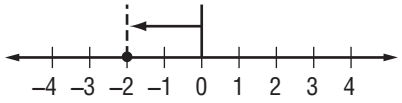


Exercises

Write an integer for each situation.

1. 12°C above zero **12**

2. a loss of $24 **−24**

3. a gain of 20 pounds **20**

4. falling 6 feet **−6**

Evaluate each expression.

5. $|12|$ **12**

6. $|-150|$ **150**

7. $|-8| + 2$ **10**

8. $|6| + |5|$ **11**

9. $|-19| - 17$ **2**

10. $|84| - |-62|$ **22**

NAME _____ DATE _____ PERIOD _____

Lesson 1 Skills Practice

Integers and Absolute Value

Write an integer for each situation.

1. 15°C below zero

2. a profit of $27

3. 2010 A.D.

4. average attendance is down 38 people

5. 376 feet above sea level

6. a withdrawal of $200

7. 3 points lost

8. a bonus of $150

9. a deposit of $41

10. 240 B.C.

11. a wage increase of $120

12. 60 feet below sea level

Evaluate each expression.

13. $|-1|$

14. $|9|$

15. $|23|$

16. $|-107|$

17. $|-45|$

18. $|19|$

19. $|0|$

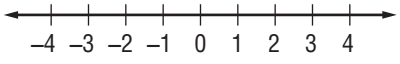
20. $|6|-|-2|$

21. $|-8|+|4|$

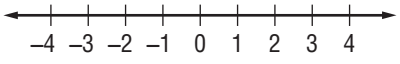
22. $|-12|-|12|$

Graph each set of integers on a number line.

23. $\{0, 2, -3\}$



24. $\{-4, -1, 3\}$



NAME _____ DATE _____ PERIOD _____

Lesson 1 Skills Practice

Integers and Absolute Value

Write an integer for each situation.

1. 15°C below zero **−15**

2. a profit of $27 **27**

3. 2010 A.D. **2010**

4. average attendance is down 38 people **−38**

5. 376 feet above sea level **376**

6. a withdrawal of $200 **−200**

7. 3 points lost **−3**

8. a bonus of $150 **150**

9. a deposit of $41 **41**

10. 240 B.C. **−240**

11. a wage increase of $120 **120**

12. 60 feet below sea level **−60**

Evaluate each expression.

13. $|-1|$ **1**

14. $|9|$ **9**

15. $|23|$ **23**

16. $|-107|$ **107**

17. $|-45|$ **45**

18. $|19|$ **19**

19. $|0|$ **0**

20. $|6|-|-2|$ **4**

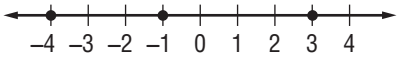
21. $|-8|+|4|$ **12**

22. $|-12|-|12|$ **0**

Graph each set of integers on a number line.

23. {0, 2, −3}

24. {−4, −1, 3}



NAME _____ DATE _____ PERIOD _____

Lesson 2 Reteach

Add Integers

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.

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.

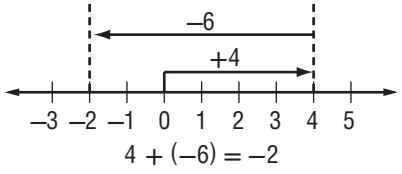
To add integers, it is helpful to use a number line.

Example 1

Find 4 + (−6).

Use a number line.

- Start at 0.
- Move 4 units right.
- Then move 6 units left.



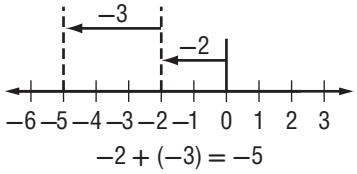
4 + (−6) = −2

Example 2

Find −2 + (−3).

Use a number line.

- Start at 0.
- Move 2 units left.
- Move another 3 units left.



−2 + (−3) = −5

Exercises

Add.

1. −5 + (−2)

2. 8 + 1

3. −7 + 10

4. 16 + (−11)

5. −22 + (−7)

6. −50 + 50

7. −10 + (−10)

8. 100 + (−25)

9. −35 + (−20)

10. −7 + (−3) + 10

11. −42 + 36 + (−36)

12. −17 + 17 + 9

Write an addition expression to describe each situation. Then find each sum.

13. HAWK A hawk is in a tree 100 feet above the ground. It flies down to the ground.

14. RUNNING Leah ran 6 blocks north then back 4 blocks south.

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Lesson 2 Reteach

Add Integers

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.

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

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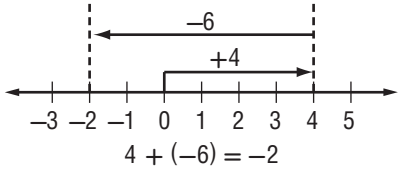

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Find −2 + (−3).

Use a number line.

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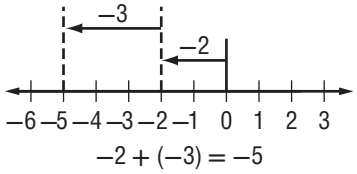

−2 + (−3) = −5

Exercises

Add.

1. −5 + (−2) **−7**

2. 8 + 1 **9**

3. −7 + 10 **3**

4. 16 + (−11) **5**

5. −22 + (−7) **−29**

6. −50 + 50 **0**

7. −10 + (−10) **−20**

8. 100 + (−25) **75**

9. −35 + (−20) **−55**

10. −7 + (−3) + 10 **0**

11. −42 + 36 + (−36) **−42**

12. −17 + 17 + 9 **9**

Write an addition expression to describe each situation. Then find each sum.

13. HAWK A hawk is in a tree 100 feet above the ground. It flies down to the ground. **100 + (−100); 0**

14. RUNNING Leah ran 6 blocks north then back 4 blocks south. **6 + (−4); 2**

NAME _____ DATE _____ PERIOD _____

Lesson 2 Skills Practice

Add Integers

Add.

1. $5 + (-8)$

2. $-3 + 3$

3. $-3 + (-8)$

4. $-7 + (-7)$

5. $-8 + 10$

6. $-7 + 13$

7. $15 + (-10)$

8. $-11 + (-12)$

9. $25 + (-12)$

10. $-14 + (-13)$

11. $14 + (-27)$

12. $-28 + 16$

13. $5 + 11 + (-5)$

14. $7 + (-5) + 5$

15. $9 + (-9) + 10$

16. $-2 + 19 + 2$

17. **FOOTBALL** The Dolphins football team gained 16 yards on their first play then lost 11 yards on the next play. Write an addition expression to represent this situation. Find the sum and explain its meaning.

18. **SAVINGS ACCOUNT** Demetrius deposits $120 into his account. One week later, he withdraws $36. Write an addition expression to represent this situation. How much higher or lower is the amount in his account after these two transactions?

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Lesson 2 Skills Practice

Add Integers

Add.

1. $5 + (-8)$ **-3**

2. $-3 + 3$ **0**

3. $-3 + (-8)$ **-11**

4. $-7 + (-7)$ **-14**

5. $-8 + 10$ **2**

6. $-7 + 13$ **6**

7. $15 + (-10)$ **5**

8. $-11 + (-12)$ **-23**

9. $25 + (-12)$ **13**

10. $-14 + (-13)$ **-27**

11. $14 + (-27)$ **-13**

12. $-28 + 16$ **-12**

13. $5 + 11 + (-5)$ **11**

14. $7 + (-5) + 5$ **7**

15. $9 + (-9) + 10$ **10**

16. $-2 + 19 + 2$ **19**

17. **FOOTBALL** The Dolphins football team gained 16 yards on their first play then lost 11 yards on the next play. Write an addition expression to represent this situation. Find the sum and explain its meaning.
16 + (−11); 5; They gained 5 yards over the 2 plays.

18. **SAVINGS ACCOUNT** Demetrius deposits $120 into his account. One week later, he withdraws $36. Write an addition expression to represent this situation. How much higher or lower is the amount in his account after these two transactions? **120 + (−36); $84 higher**

NAME _____ DATE _____ PERIOD _____

Lesson 3 Reteach

Subtract Integers

To subtract an integer, add its opposite.

Example 1

Find $6 - 9$.

$6 - 9 = 6 + (-9)$ To subtract 9, add -9.

$= -3$ Simplify.

Example 2

Find $-10 - (-12)$.

$-10 - (-12) = -10 + 12$ To subtract -12, add 12.

$= 2$ Simplify.

Example 3

Evaluate $a - b$ if $a = -3$ and $b = 7$.

$a - b = -3 - 7$ Replace a with -3 and b with 7.

$= -3 + (-7)$ To subtract 7, add -7.

$= -10$ Simplify.

Exercises

Subtract.

1. $7 - 9$

2. $20 - (-6)$

3. $-10 - 4$

4. $0 - 12$

5. $-7 - 8$

6. $13 - 18$

7. $-20 - (-5)$

8. $-8 - (-6)$

9. $25 - (-14)$

10. $-75 - 50$

11. $15 - 65$

12. $19 - (-10)$

Evaluate each expression if $m = -2$, $n = 10$, and $p = 5$.

13. $m - 6$

14. $9 - n$

15. $p - (-8)$

16. $p - m$

17. $m - n$

18. $-25 - p$

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Lesson 3 Reteach

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$a - b = -3 - 7$ Replace a with -3 and b with 7.

$= -3 + (-7)$ To subtract 7, add -7.

$= -10$ Simplify.

Exercises

Subtract.

1. $7 - 9$ **−2**

2. $20 - (-6)$ **26**

3. $-10 - 4$ **−14**

4. $0 - 12$ **−12**

5. $-7 - 8$ **−15**

6. $13 - 18$ **−5**

7. $-20 - (-5)$ **−15**

8. $-8 - (-6)$ **−2**

9. $25 - (-14)$ **39**

10. $-75 - 50$ **−125**

11. $15 - 65$ **−50**

12. $19 - (-10)$ **29**

Evaluate each expression if $m = -2$, $n = 10$, and $p = 5$.

13. $m - 6$ **−8**

14. $9 - n$ **−1**

15. $p - (-8)$ **13**

16. $p - m$ **7**

17. $m - n$ **−12**

18. $-25 - p$ **−30**

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Lesson 3 Skills Practice

Subtract Integers

Subtract.

1. $5 - 2$

2. $6 - (-7)$

3. $-3 - 2$

4. $8 - 13$

5. $-7 - (-7)$

6. $6 - 12$

7. $15 - (-7)$

8. $-15 - 6$

9. $-3 - 8$

10. $-10 - 12$

11. $13 - (-12)$

12. $14 - (-22)$

13. $10 - (-20)$

14. $-16 - 14$

15. $-25 - 25$

16. $6 - (-31)$

17. $-18 - (-40)$

18. $15 - (-61)$

Evaluate each expression if $r = -4$, $s = 10$, and $t = -7$.

19. $r - 7$

20. $t - s$

21. $s - (-8)$

22. $t - r$

23. $s - t$

24. $r - s$

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Lesson 3 Skills Practice

Subtract Integers

Subtract.

1. $5 - 2$ **3**

2. $6 - (-7)$ **13**

3. $-3 - 2$ **−5**

4. $8 - 13$ **−5**

5. $-7 - (-7)$ **0**

6. $6 - 12$ **−6**

7. $15 - (-7)$ **22**

8. $-15 - 6$ **−21**

9. $-3 - 8$ **−11**

10. $-10 - 12$ **−22**

11. $13 - (-12)$ **25**

12. $14 - (-22)$ **36**

13. $10 - (-20)$ **30**

14. $-16 - 14$ **−30**

15. $-25 - 25$ **−50**

16. $6 - (-31)$ **37**

17. $-18 - (-40)$ **22**

18. $15 - (-61)$ **76**

Evaluate each expression if $r = -4$, $s = 10$, and $t = -7$.

19. $r - 7$ **−11**

20. $t - s$ **−17**

21. $s - (-8)$ **18**

22. $t - r$ **−3**

23. $s - t$ **17**

24. $r - s$ **−14**

NAME _____ DATE _____ PERIOD _____

Lesson 4 Reteach

Multiply Integers

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

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

Example 1

Find 5(−2).

$5(-2) = -10$ The integers have different signs. The product is negative.

Example 2

Find −3(7).

$-3(7) = -21$ The integers have different signs. The product is negative.

Example 3

Find −6(−9).

$-6(-9) = 54$ The integers have the same sign. The product is positive.

Example 4

Find $(-7)^2$.

$(-7)^2 = (-7)(-7)$ There are 2 factors of −7.
$= 49$ The product is positive.

Example 5

Find −2(−3)(4).

$-2(-3)(4)$
$= 6(4)$ Multiply −2 and −3.
$= 24$ Multiply 6 and 4.

Exercises

Multiply.

1. $-5(8)$ **2.** $-3(-7)$ **3.** $10(-8)$

4. $-8(3)$ **5.** $-12(-12)$ **6.** $(-8)^2$

7. $-5(7)$ **8.** $3(-2)$ **9.** $-6(-3)$

10. $5(-4)(5)$ **11.** $-4(-4)$ **12.** $2(-3)(5)$

13. $-2(-3)$ **14.** $9(-4)$ **15.** $(-3)(-4)$

16. $-3(-3)(5)$ **17.** $-2(5)^2$ **18.** $(-3)(-4)(5)$

NAME _____ DATE _____ PERIOD _____

Lesson 4 Reteach

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Find −2(−3)(4).

$-2(-3)(4)$
$= 6(4)$ Multiply −2 and −3.
$= 24$ Multiply 6 and 4.

Exercises

Multiply.

1. $-5(8)$ **−40**

2. $-3(-7)$ **21**

3. $10(-8)$ **−80**

4. $-8(3)$ **−24**

5. $-12(-12)$ **144**

6. $(-8)^2$ **64**

7. $-5(7)$ **−35**

8. $3(-2)$ **−6**

9. $-6(-3)$ **18**

10. $5(-4)(5)$ **−100**

11. $-4(-4)$ **16**

12. $2(-3)(5)$ **−30**

13. $-2(-3)$ **6**

14. $9(-4)$ **−36**

15. $(-3)(-4)$ **12**

16. $-3(-3)(5)$ **45**

17. $-2(5)^2$ **−50**

18. $(-3)(-4)(5)$ **60**

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Lesson 4 Skills Practice

Multiply Integers

Multiply.

1. $-4(6)$

2. $-2(-8)$

3. $12(-4)$

4. $-6(5)$

5. $-10(-9)$

6. $-(5)^2$

7. $(-5)^2$

8. $-30(5)$

9. $20(-6)$

10. $-14(-6)$

11. $(-13)^2$

12. $-7(15)$

13. $-3(4)$

14. $7(-3)$

15. $3(-3)$

16. $-2(-10)$

17. $(-5)(-3)(4)$

18. $-3(-3)(4)$

19. $-3(-5)$

20. $5(-3)$

21. $7(-5)(4)$

22. $-2(-5)(-3)$

23. $-10(-3)$

24. $-2(-3)^2$

NAME _____ DATE _____ PERIOD _____

Lesson 4 Skills Practice

Multiply Integers

Multiply.

1. $-4(6)$ **-24**

2. $-2(-8)$ **16**

3. $12(-4)$ **-48**

4. $-6(5)$ **-30**

5. $-10(-9)$ **90**

6. $-(5)^2$ **-25**

7. $(-5)^2$ **25**

8. $-30(5)$ **-150**

9. $20(-6)$ **-120**

10. $-14(-6)$ **84**

11. $(-13)^2$ **169**

12. $-7(15)$ **-105**

13. $-3(4)$ **-12**

14. $7(-3)$ **-21**

15. $3(-3)$ **-9**

16. $-2(-10)$ **20**

17. $(-5)(-3)(4)$ **60**

18. $-3(-3)(4)$ **36**

19. $-3(-5)$ **15**

20. $5(-3)$ **-15**

21. $7(-5)(4)$ **-140**

22. $-2(-5)(-3)$ **-30**

23. $-10(-3)$ **30**

24. $-2(-3)^2$ **-18**

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Lesson 5 Reteach

Divide Integers

The quotient of two integers with different signs is negative.

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

Example 1

Find $30 \div (-5)$.

$30 \div (-5)$ The integers have different signs.

$30 \div (-5) = -6$ The quotient is negative.

Example 2

Find $-100 \div (-5)$.

$-100 \div (-5)$ The integers have the same sign.

$-100 \div (-5) = 20$ The quotient is positive.

Exercises

Divide.

1. $-12 \div 4$

2. $-14 \div (-7)$

3. $\frac{18}{-2}$

4. $-6 \div (-3)$

5. $-10 \div 10$

6. $\frac{-80}{-20}$

7. $350 \div (-25)$

8. $-420 \div (-3)$

9. $\frac{540}{45}$

10. $\frac{-256}{16}$

ALGEBRA Evaluate each expression if $d = -24$, $e = -4$, and $f = 8$.

11. $12 \div e$

12. $40 \div f$

13. $d \div 6$

14. $d \div e$

15. $f \div e$

16. $e^2 \div f$

17. $\frac{-d}{e}$

18. $ef \div 2$

19. $\frac{f + 8}{-4}$

20. $\frac{d - e}{5}$

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Lesson 5 Reteach

Divide Integers

The quotient of two integers with different signs is negative.

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

Example 1

Find $30 \div (-5)$.

$30 \div (-5)$ The integers have different signs.

$30 \div (-5) = -6$ The quotient is negative.

Example 2

Find $-100 \div (-5)$.

$-100 \div (-5)$ The integers have the same sign.

$-100 \div (-5) = 20$ The quotient is positive.

Exercises

Divide.

1. $-12 \div 4$ **−3**

2. $-14 \div (-7)$ **2**

3. $\frac{18}{-2}$ **−9**

4. $-6 \div (-3)$ **2**

5. $-10 \div 10$ **−1**

6. $\frac{-80}{-20}$ **4**

7. $350 \div (-25)$ **−14**

8. $-420 \div (-3)$ **140**

9. $\frac{540}{45}$ **12**

10. $\frac{-256}{16}$ **−16**

ALGEBRA Evaluate each expression if $d = -24$, $e = -4$, and $f = 8$.

11. $12 \div e$ **−3**

12. $40 \div f$ **5**

13. $d \div 6$ **−4**

14. $d \div e$ **6**

15. $f \div e$ **−2**

16. $e^2 \div f$ **2**

17. $\frac{-d}{e}$ **−6**

18. $ef \div 2$ **−16**

19. $\frac{f + 8}{-4}$ **−4**

20. $\frac{d - e}{5}$ **−4**

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Lesson 5 Skills Practice

Divide Integers

Divide.

1. $-15 \div 3$

2. $-24 \div (-8)$

3. $22 \div (-2)$

4. $-49 \div (-7)$

5. $-8 \div (-8)$

6. $\frac{36}{-4}$

7. $225 \div (-15)$

8. $\frac{0}{-9}$

9. $-38 \div 2$

10. $\frac{64}{4}$

11. $-500 \div (-50)$

12. $-189 \div (-21)$

ALGEBRA Evaluate each expression if $m = -32$, $n = 2$, and $p = -8$.

13. $m \div n$

14. $p \div 4$

15. $p^2 \div m$

16. $m \div p$

17. $\frac{-p}{n}$

18. $p \div (-n^2)$

19. $\frac{p}{4n}$

20. $\frac{18 - n}{-4}$

21. $\frac{m + 8}{-4}$

22. $\frac{m + n}{6}$

NAME _____ DATE _____ PERIOD _____

Lesson 5 Skills Practice

Divide Integers

Divide.

1. $-15 \div 3$ **−5**

2. $-24 \div (-8)$ **3**

3. $22 \div (-2)$ **−11**

4. $-49 \div (-7)$ **7**

5. $-8 \div (-8)$ **1**

6. $\frac{36}{-4}$ **−9**

7. $225 \div (-15)$ **−15**

8. $\frac{0}{-9}$ **0**

9. $-38 \div 2$ **−19**

10. $\frac{64}{4}$ **16**

11. $-500 \div (-50)$ **10**

12. $-189 \div (-21)$ **9**

ALGEBRA Evaluate each expression if $m = -32$, $n = 2$, and $p = -8$.

13. $m \div n$ **−16**

14. $p \div 4$ **−2**

15. $p^2 \div m$ **−2**

16. $m \div p$ **4**

17. $\frac{-p}{n}$ **4**

18. $p \div (-n^2)$ **2**

19. $\frac{p}{4n}$ **−1**

20. $\frac{18 - n}{-4}$ **−4**

21. $\frac{m + 8}{-4}$ **6**

22. $\frac{m + n}{6}$ **−5**