

Name: School: Grade: Class:

11-2 Adding Integers - Practice and Problem Solving

Add. Use counters or a number line if necessary.

9. $+5 + (+1)$

$$+5 + (+1) = +6 \text{ or } 6$$

11. $3 + (+4)$

$$3 + (+4) = +7 \text{ or } 7$$

13. $+9 + 4$

$$+9 + 4 = +13 \text{ or } 13$$

15. $-5 + (-4)$

$$-5 + (-4) = -9$$

17. $-3 + (-3)$

$$-3 + (-3) = -6$$

19. $-6 + (-10)$

$$-6 + (-10) = -16$$

21. $-3 + (+3)$

$$-3 + (+3) = 0$$

23. $-12 + 7$

$$-12 + 7 = -5$$

25. $8 + (-18)$

$$8 + (-18) = -10$$

Write an addition problem that represents the situation. Then solve.

- 27. E-MAIL** Katie has 27 messages in her e-mail inbox. She deletes 14 of them. How many messages does she have left in her inbox?

$$-25 + 12 = -13$$

The diver is at -13 feet.

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29. **ALGEBRA** Evaluate $a + b$ if $a = -9$ and $b = 4$.

$$\begin{aligned} a + b &= -9 + 4 \\ &= -5 \end{aligned}$$

Add.

31. $5 + (-8) + (-7) + 11$

$$\begin{aligned} 5 + (-8) + (-7) + 11 &= -3 + (-7) + 11 \\ &= -10 + 11 \\ &= +1 \text{ or } 1 \end{aligned}$$

33. $3 + (-5) + 7 + 0 + (-2)$

$$\begin{aligned} 3 + (-5) + 7 + 0 + (-2) &= -2 + 7 + 0 + (-2) \\ &= 5 + 0 + (-2) \\ &= 5 + (-2) \\ &= 3 \end{aligned}$$

35. **MONEY** Sophia's checking account statement shows that her current balance is $-\$247$. She deposits $\$225$ into her checking account. What is Sophia's new checking account balance?

$$-247 + 225 = -22$$

The new checking account balance is $-\$22$.

37. **TIME ZONES** The map and table below show how the time in several of the world's cities is related to the time in London. If it is 1 p.m. in London, what time is it in New York City and Jakarta? If it is 11 a.m. in Shanghai, what time is it in Paris?



Source: United States Navy

New York City: 8 A.M.; Jakarta: 3 A.M.; Paris: 4 A.M.

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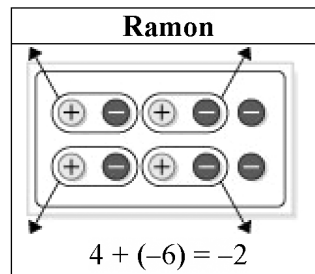
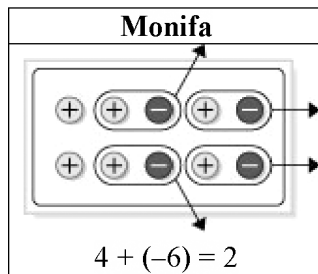
39. **CLIMBING** Lakin is painting his grandmother's house. He climbs 10 feet up the ladder. Then he climbs down 8 feet and then ascends another 7 feet. What is Lakin's location on the ladder?

Let upward movement be represented by positive numbers and downward movement by negative numbers.

$$\begin{aligned}\text{Lakin's location} &= +10 + (-8) + (+7) \\ &= +2 + (+7) \\ &= 9\end{aligned}$$

He is 9 ft above ground.

41. **FIND THE ERROR** Monifa and Ramon are finding $4 + (-6)$. Who is correct? Explain your reasoning.



Ramon is correct. He used 4 positive counters and 6 negative counters to correctly model $4 + (-6)$. After forming zero pairs, he is left with the correct answer, -2 .

NUMBER SENSE Tell whether each sum is *positive*, *negative*, or *zero* without adding.

43. $-2 + 2$

$-2 + 2$ will be zero because the sum of an integer and its opposite is always zero.

45. $-5 + 2$

$-5 + 2$ will be negative because the integer with the greatest absolute value is negative.

47. $-2 + (-6)$

$-2 + (-6)$ will be negative because the sum of two negative integers is always negative.

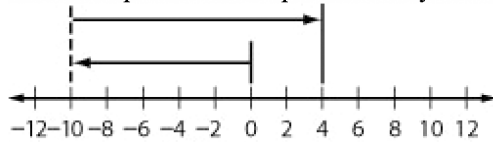
CHALLENGE Find possible integer values for x and y that make each statement true.

49. $x + (-y) = y + y$

Sample answer: $x = 24, y = 8$

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51. Which expression is represented by the model?



- A $0 + (-4)$
- B $-10 + 4$
- C $-14 + 10$
- D $-10 + 14$

The model shows, starting from the origin, a movement 10 units left and a movement 14 units to right.

$$0 + (-10) + 14 = -10 + 14$$

The answer is D.

53. **TESTS** Jacqui's score on the biology test was the average score for his class. Marquez's score was three points above the average, Melanie's score was 10 points below the average, and Len's score was 5 points above the average. Write the scores as integers and order them from least to greatest.

Take the average score to be zero.

Write each student's score.

$$\text{Jacqui} = 0$$

$$\text{Marquez} = 0 + 3 \text{ or } 3$$

$$\text{Melanie} = 0 + (-10) \text{ or } -10$$

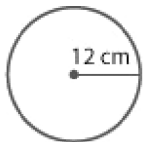
$$\text{Len} = 0 + 5 \text{ or } 5$$

Now order the scores from least to greatest.

-10, 0, 3, 5

Estimate the circumference of each circle.

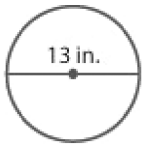
- 55.



$$\begin{aligned} C &= 2\pi r \\ &= 2\pi(12) \\ &\approx (2)(3)(12) \\ &\approx 72 \text{ cm} \end{aligned}$$

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57.



$$\begin{aligned}C &= \pi d \\&= \pi(13) \\&\approx (3)(13) \\&\approx 39 \text{ in.}\end{aligned}$$

59. **RAPELLING** LaTasha is going on a rapelling trip with some friends. They're going to repel down a 50-foot cliff, a 180-foot cliff, a 90-foot tower, and a 200-foot canyon. What is the average height they are going to rappel?

Find the average of 50, 180, 90, and 200.

$$\begin{aligned}\frac{50 + 180 + 90 + 200}{4} &= \frac{520}{4} \\&= 130\end{aligned}$$

The average height is 130 ft.

PREREQUISITE SKILL Subtract.

61. $6 - 4$

$$6 - 4 = 2$$

63. $10 - 3$

$$10 - 3 = 7$$