

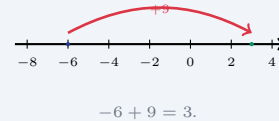
Adding and Subtracting Integers

Name: _____ Date: _____ Score: _____ / 18

Quick Review and Helpful Hints

Same signs: add the absolute values and keep the shared sign. Different signs: subtract the smaller absolute value from the larger and take the sign of the larger. To subtract, add the opposite: $a - b = a + (-b)$.

▶ **Example:** Evaluate $-6 - (-9)$. **Work:** Rewrite subtraction as adding the opposite: $-6 + 9$. The signs differ, so subtract: $9 - 6 = 3$, and take the sign of the larger absolute value (positive). ★ **Answer:** 3



◆ Practice Problems

Add or subtract.

- | | |
|---|---|
| <p>1. $5 + (-3)$ _____</p> <p>2. $-4 + (-6)$ _____</p> <p>3. $-7 + 10$ _____</p> <p>4. $8 - 12$ _____</p> <p>5. $-5 - 3$ _____</p> <p>6. $-9 + 9$ _____</p> <p>7. $6 - (-4)$ _____</p> | <p>8. $-2 - (-5)$ _____</p> <p>9. $-10 + 4$ _____</p> <p>10. $7 + (-7)$ _____</p> <p>11. $-3 - 8$ _____</p> <p>12. $12 + (-5)$ _____</p> <p>13. $-6 - (-2)$ _____</p> <p>14. $-8 + 15$ _____</p> |
|---|---|

◆ Word Problems

15. At dawn the temperature was -9°F . It rose 18° by noon. What was the noon temperature? _____
16. A submarine sits at -340 feet, then rises 160 feet. What is its new depth? _____
17. An account is $-\$47$ (overdrawn). After a $\$62$ deposit, what is the balance? _____
18. A hiker at 200 feet descends 350 feet. What is the new elevation? _____



Answer Keys

- | | | |
|-------------------------------------|--------------------------------------|--|
| 1. <input type="text" value="2"/> | 7. <input type="text" value="10"/> | 13. <input type="text" value="-4"/> |
| 2. <input type="text" value="-10"/> | 8. <input type="text" value="3"/> | 14. <input type="text" value="7"/> |
| 3. <input type="text" value="3"/> | 9. <input type="text" value="-6"/> | 15. <input type="text" value="9°F"/> |
| 4. <input type="text" value="-4"/> | 10. <input type="text" value="0"/> | 16. <input type="text" value="-180 ft"/> |
| 5. <input type="text" value="-8"/> | 11. <input type="text" value="-11"/> | 17. <input type="text" value="\$15"/> |
| 6. <input type="text" value="0"/> | 12. <input type="text" value="7"/> | 18. <input type="text" value="-150 ft"/> |

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is The signs are different, so subtract the absolute values: $5 - 3 = 2$. The larger number, 5, is positive, so the answer is positive: 2. So the final answer is 2.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Same signs, so add the absolute values: $4 + 6 = 10$, and keep the shared negative sign: -10 . So the final answer is -10 .

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: subtract $10 - 7 = 3$. The larger number, 10, is positive, so 3. So the final answer is 3.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Rewrite as $8 + (-12)$. Different signs: $12 - 8 = 4$, and the larger is negative, so -4 . So the final answer is -4 .

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Rewrite as $-5 + (-3)$. Same signs: $5 + 3 = 8$, both negative, so -8 . So the final answer is -8 .

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is These are opposites, so they cancel to 0. So the final answer is 0.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Subtracting a negative is the same as adding: $6 - (-4) = 6 + 4 = 10$. So the final answer is 10.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Subtracting a negative is adding: $-2 - (-5) = -2 + 5 = 3$. So the final answer is 3.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $10 - 4 = 6$, and the larger number, 10, is negative, so -6 . So the final answer is -6 .

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Opposites cancel: $7 + (-7) = 0$. So the final answer is 0.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Rewrite as $-3 + (-8)$. Same signs: $3 + 8 = 11$, both negative, so -11 . So the final answer is -11 .

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $12 - 5 = 7$, and the larger is positive, so 7. So the final answer is 7.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Subtracting a negative is adding: $-6 + 2$; different signs give $6 - 2 = 4$, negative, so -4 . So the final answer is -4 .

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Different signs: $15 - 8 = 7$, and the larger number, 15, is positive, so 7. So the final answer is 7.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Start at -9 and add the rise: $-9 + 18$. Different signs give $18 - 9 = 9$, positive, so 9°F . So the final answer is 9°F .

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Start at -340 and add the rise: $-340 + 160 = -180$ ft (still below the surface). So the final answer is -180 ft.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Add the deposit to the balance: $-47 + 62 = 15$, so the balance is \$15. So the final answer is \$15.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Subtract the descent from the starting height: $200 - 350 = -150$ ft. So the final answer is -150 ft.



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