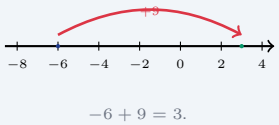
Adding and Subtracting Integers

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



$-6 + 9 = 3.$

Practice Problems

Add or subtract.

1. $5 + (-3)$ _____

2. $-4 + (-6)$ _____

3. $-7 + 10$ _____

4. $8 - 12$ _____

5. $-5 - 3$ _____

6. $-9 + 9$ _____

7. $6 - (-4)$ _____

8. $-2 - (-5)$ _____

9. $-10 + 4$ _____

10. $7 + (-7)$ _____

11. $-3 - 8$ _____

12. $12 + (-5)$ _____

13. $-6 - (-2)$ _____

14. $-8 + 15$ _____

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. 2	**7.** 10	**13.** -4
2. -10	**8.** 3	**14.** 7
3. 3	**9.** -6	**15.** $9°\text{F}$
4. -4	**10.** 0	**16.** -180 ft
5. -8	**11.** -11	**17.** $\$15$
6. 0	**12.** 7	**18.** -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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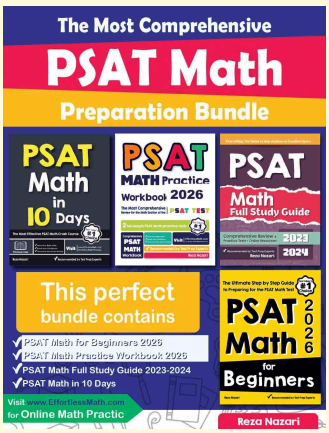

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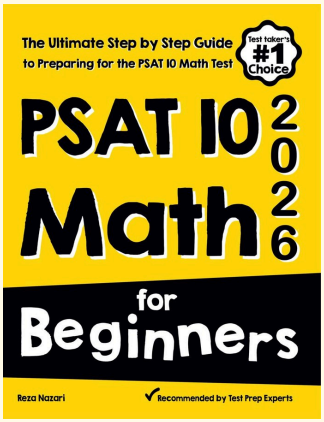

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