

Lesson 2 Reteach

Adding Integers

Add Integers with the Same Sign	Add their absolute values. The sum is: <ul style="list-style-type: none"> • positive if both integers are positive. • negative if both integers are negative.
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Example 1 Find the sum $-3 + (-4)$.

$$-3 + (-4) = -7 \quad \text{Add } |-3| \text{ and } |-4|. \text{ The sum is negative.}$$

Add Integers with Different Signs	Subtract their absolute values. The sum is: <ul style="list-style-type: none"> • positive if the positive integer's absolute value is greater. • negative if the negative integer's absolute value is greater.
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Example 2 Find the sum $-5 + 4$.

$$\begin{aligned} -5 + 4 &= |-5| - |4| && \text{Subtract } |4| \text{ from } |-5|. \\ &= 5 - 4 \text{ or } 1 && \text{Simplify.} \\ &= -1 && \text{The sum is negative because } |-5| > |4|. \end{aligned}$$

Two numbers with the same absolute value but different signs are **opposites**. An integer and its opposite are also called **additive inverses**. This property is useful when adding 2 or more integers.

Example 3 Find the sum $12 + (-4) + 9 + (-7)$.

$$\begin{aligned} 12 + (-4) + 9 + (-7) &= 12 + 9 + (-4) + (-7) && \text{Commutative Property} \\ &= (12 + 9) + [-4 + (-7)] && \text{Associative Property} \\ &= 21 + (-11) \text{ or } 10 && \text{Simplify.} \end{aligned}$$

Exercises

Find each sum.

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|-------------------------------|-------------------------------|-------------------|
| 1. $6 + (-3)$ | 2. $-3 + (-5)$ | 3. $7 + (-3)$ |
| 4. $-4 + (-4)$ | 5. $-8 + 5$ | 6. $-12 + (-10)$ |
| 7. $7 + (-18)$ | 8. $-12 + (-15)$ | 9. $10 + (-14)$ |
| 10. $-33 + 19$ | 11. $-20 + (-5)$ | 12. $-15 + (-20)$ |
| 13. $-15 + 4$ | 14. $-34 + 29$ | 15. $46 + (-32)$ |
| 16. $6 + (-14) + (-5) + (-6)$ | 17. $-18 + 9 + (-7) + 18$ | |
| 18. $5 + 13 + (-11) + 6$ | 19. $-20 + 15 + (-10) + 3$ | |
| 20. $-33 + (-7) + 20 + 4$ | 21. $16 + (-12) + 21 + (-25)$ | |