

Maintaining Mathematical Proficiency

Adding and Subtracting Integers

Example 1 Evaluate $4 + (-12)$.

$$4 + (-12) = -8$$

$| -12 | > | 4 |$. So, subtract $| 4 |$ from $| -12 |$.

Use the sign of -12 .

Example 2 Evaluate $-7 - (-16)$.

$$\begin{aligned} -7 - (-16) &= -7 + 16 && \text{Add the opposite of } -16. \\ &= 9 && \text{Add.} \end{aligned}$$

Add or subtract.

- | | | |
|-----------------|----------------|----------------|
| 1. $-5 + (-2)$ | 2. $0 + (-13)$ | 3. $-6 + 14$ |
| 4. $19 - (-13)$ | 5. $-1 - 6$ | 6. $-5 - (-7)$ |
| 7. $17 + 5$ | 8. $8 + (-3)$ | 9. $11 - 15$ |

Multiplying and Dividing Integers

Example 3 Evaluate $-3 \cdot (-5)$.

The integers have the same sign.

$$-3 \cdot (-5) = 15$$

The product is positive.

Example 4 Evaluate $15 \div (-3)$.

The integers have different signs.

$$15 \div (-3) = -5$$

The quotient is negative.

Multiply or divide.

- | | | |
|---------------------|---------------------|--------------------|
| 10. $-3(8)$ | 11. $-7 \cdot (-9)$ | 12. $4 \cdot (-7)$ |
| 13. $-24 \div (-6)$ | 14. $-16 \div 2$ | 15. $12 \div (-3)$ |
| 16. $6 \cdot 8$ | 17. $36 \div 6$ | 18. $-3(-4)$ |

19. **ABSTRACT REASONING** Summarize the rules for (a) adding integers, (b) subtracting integers, (c) multiplying integers, and (d) dividing integers. Give an example of each.