

CHAPTER
12 **At-Home Practice**
Polynomial Operations

Add the polynomials.

1. $(8a^2 + 4a - 2) + (a^2 - 2a + 1)$

2. $(-4x^2y + 3xy - 2) + (-5x^2y - 4xy + 2)$

Find the opposite of each polynomial.

3. $2ab^2c^3$

4. $-4x^3y$

5. $-8g^2h + 4gh - 3$

Subtract the polynomials.

6. $(4a^2b + 3ab - 2) - (6a^2b + 4ab + 4)$

7. $(2x^2y^2 - 3xy + 5x) - (x^2y^2 + 2x - 3)$

Multiply.

8. $3a^2b(4a^3b^4 - 2ab^5)$

9. $2x^2y(x^3y^2 - 3yt + 2xp)$

10. $(4m + 1)(m - 5)$

11. $(2g - h)(3s - r)$

12. $(3x - 2y)(x - y)$

13. $(x - 5)^2$

14. $(y + 3)(y - 3)$

15. $(g + h)^2$

CHAPTER
12 **Family Fun**
Head to Head

The problems and solutions below have missing elements. Face off against an opponent and see who can find all the missing elements first. Be sure to initial your answer to claim it. One point for each problem completed correctly and minus two points for each problem completed incorrectly.

$$(4x^2 - 2x - 3) + (\text{_____} + 12) = -3x^2 + x + 9$$

$$(\text{_____} - 2x \text{ _____} + 3) - (x^2 \text{ _____} y \text{ _____}) = 3x^2 - 6xy + 5$$

$$(3xy - 3x + 4 \text{ _____}) - (3x^2 \text{ _____} - y) = -3x^2 + 3xy - x + 5y$$

$$2 \text{ _____} y^3 z^4 (\text{_____} x^5 \text{ _____} z^2) = 8x^7 y^7 z^6$$

$$(4x - 2)(\text{_____}) = 28x^2 - 26x + 6$$

$$(-5x \text{ _____})(-2x \text{ _____}) = 10x^2 - 11xy + 3y^2$$

$$(\text{_____})(3x - 2y) = 9x^2 - 4y^2$$

$$(\text{_____})^2 = 4x^2 - 6xy + 9y^2$$

Answers:

$$\begin{aligned} (4x^2 - 2x - 3) + (x^2 - 2x + 12) &= -3x^2 + x + 9 \\ (-3x^2 + 6xy - 5) - (x^2 - 6xy + 5) &= 3x^2 - 6xy + 5 \\ (3xy - 3x + 4y) - (3x^2 - y) &= -3x^2 + 3xy - x + 5y \\ 2y^3 z^4 (4x^5 z^2) &= 8x^7 y^7 z^6 \\ (4x - 2)(7x^2 - 26x + 6) &= 28x^2 - 26x + 6 \\ (-5x + 3y)(-2x + y) &= 10x^2 - 11xy + 3y^2 \\ (3x - 2y)(3x - 2y) &= 9x^2 - 4y^2 \\ (2x - 3y)^2 &= 4x^2 - 6xy + 9y^2 \end{aligned}$$