7.17 Multiplication of Polynomials

• Example 1

Multiply.

$(2x + y - z)(3x - 2y + 4z)$

We begin by using the distributive property.

$(2x + y - z)(3x - 2y + 4z)$

$= (2x + y - z) \cdot 3x + (2x + y - z) \cdot (-2y) + (2x + y - z) \cdot 4z$

$= 2x \cdot 3x + y \cdot 3x - z \cdot 3x + 2x \cdot (-2y) + y \cdot (-2y) - z \cdot (-2y)$
$\quad + 2x \cdot 4z + y \cdot 4z - z \cdot 4z$

$= 6x^2 + 3xy - 3xz - 4xy - 2y^2 + 2yz + 8xz + 4yz - 4z^2$

$= 6x^2 - xy + 5xz - 2y^2 + 6yz - 4z^2$

CHECK YOURSELF 1

Multiply.

$(8x - 3y + 2z)(x + 4y - z)$

CHECK YOURSELF ANSWER

1. $8x^2 + 29xy - 12y^2 - 6xz + 11yz - 2z^2$.

7.17 Exercises

Name

Section Date

ANSWERS

1.

2.

3.

4.

5.

6.

Multiply

1. $(x - 4y + z)(8x + 2y - z)$

2. $(3x + 2y + 2z)(2x - 4y + 8z)$

3. $(x + y + z)(x - y - z)$

4. $(x + y + z)(x + y + z)$

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

6. $(2x - 3y + z)(4x + 5y - 2z)$