

Warm - Up

If $ax^2 + bx + c$, find the values of ac that multiply to b .

1. $x^2 + 5x + 6$

2. $3x^2 - 19x - 14$

3. $2x^2 - 5x + 3$

4. $x^2 - 7x + 12$

Homework - Pg. 487

11. $4c^4 + 8c + 6$

12. $10y^2 - 13y + 9$

13. $-3r + 11$

14. $-9k^2 - 5k + 4$

15. $8a^2 + 5a + 9$

29. $-2t^3 + 8t^2$

30. $2x^2 - 3x$

31. $-6m^3 + 2m^2 + 5m + 3$

32. $13s^2 - 2s$

45. B is incorrect

Objective

Multiply polynomials.

Example 1: Multiplying Monomials

Multiply.

A. $(6y^3)(3y^5)$

$$\boxed{18y^8}$$

B. $(3mn^2)(9m^2n)$

$$\boxed{27m^3n^3}$$

$$\left(\frac{1}{4}s^2t^2\right)(st)(-12st^2)$$

$$\left(\frac{1}{4}s^3t^3\right)(12st^2) = \boxed{3s^4t^5}$$

Remember!

When multiplying powers with the same base, keep the base and add the exponents.

$$x^2 \cdot x^3 = x^{2+3} = x^5$$

Check It Out! Example 1

Multiply.

a. $(3x^3)(6x^2)$

$$\boxed{18x^5}$$

b. $(2r^2t)(5t^3)$

$$\boxed{10r^2t^4}$$

c. $\left(\frac{1}{3}x^2y\right)(12x^3z^2)(y^4z^5)$

$$(4x^5yz^2)(y^4z^5) = \boxed{4x^5y^5z^7}$$

To multiply a polynomial by a monomial, use the Distributive Property.

Multiply.

$$4(3x^2 + 4x - 8)$$

$$12x^2 + 16x - 32$$

$$6pq(2p - q)$$

$$12p^2q - 6pq^2$$

$$\frac{1}{2}x^2y(6xy + 8x^2y^2)$$

$$3x^3y^2 + 4x^4y^3$$

Check It Out! Example 2

Multiply.

a. $2(4x^2 + x + 3)$

$$8x^2 + 2x + 6$$

b. $3ab(5a^2 + b)$

$$3a^3b + 3ab^2$$

c. $5r^2s^2(r - 3s)$

$$5r^3s^2 - 15r^2s^3$$

Daily Practice

Pg. 497 #1 - 5 odds, 8 - 12 evens, 25

Multiply.

1. $(2x^2)(7x^4)$

2. $(-5mn^3)(4m^2n^2)$

3. $(6rs^2)(s^3t^2)\left(\frac{1}{2}r^4t^3\right)$

4. $\left(\frac{1}{3}a^5\right)(12a)$

5. $(-3x^4y^2)(-7x^3y)$

6. $(-2pq^3)(5p^2q^2)(-3q^4)$

7. $4(x^2 + 2x + 1)$

8. $3ab(2a^2 + 3b^3)$

9. $2a^3b(3a^2b + ab^2)$

10. $-3x(x^2 - 4x + 6)$

11. $5x^2y(2xy^3 - y)$

12. $5m^2n^3 \cdot mn^2(4m - n)$

25. **Photography** The length of a rectangular photograph is 3 inches less than twice the width.

- a. Write a polynomial that represents the area of the photograph.
 b. Find the area of the photograph when the width is 4 inches.



