

**WORKSHEET**      **MULTIPLYING A POLYNOMIAL  
BY A MONOMIAL**  
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Follow the steps below to multiply a polynomial by a monomial:

1. Multiply each term of the polynomial by the monomial. (Use the distributive property,  $a(b + c) = ab + ac$ , and multiply the monomials using the property of exponents for multiplication,  $x^m \cdot x^n = x^{m+n}$ .)
2. Find the sum.

**EXAMPLE**

$$-8x^4(2x^2 - 7x + 5) = (-8x^4)(2x^2) + (-8x^4)(-7x) + (-8x^4)(5) = -16x^6 + 56x^5 - 40x^4$$

**DIRECTIONS:** Find the product.

1.  $5(x + 2)$

2.  $3(x - 4)$

3.  $4x(x + 5)$

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

5.  $-3a(4a^2 + 1)$

6.  $5a^2(6a^4 - 7)$

7.  $8x^2y(3x^2 + 4xy)$

8.  $7x^2(x^3 + 5x - 2)$

9.  $6a^2b^2(a + 4a^3b + 8b^2)$