**MULTIPLYING MONOMIALS**

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| **Recap: Exponent Laws for Multiplication**  Simplify:  a) b)  c)  **To multiply monomials, you:**   1. Multiply the coefficients 2. Multiply the variables  |  |  |  | | --- | --- | --- | | Example 1: 3(4x) | Example 2: -2x(5x2) | Example 3: 5xy(-x2) | |

**Practice: Multiplying Monomials**

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| a) 5(2x) | b) -2x(4x) | c) 5x(3x2) |
| d) -4x(-x) | e) 7xy(-3xy) | f) 5x(2xy) |

**THE DISTRIBUTIVE PROPERTY**

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| **To multiply a binomial by a monomial, you:**   |  | | --- | | Multiply each term inside the bracket by the term outside the bracket. |   **Ex1:** 3(x+5) **Ex2:** -3(x - 2) **Ex3:** 3x(x2 -2x + 1) |

**Practice: Distributive Law**

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| a. 4(2a + 3b) | b. 2m2(5m3 – 2m + 1) | c. 3(4x – 2y) |
| d. 3b3(2b2 + 4b – 3) | e. –2(2x + 3y – z) | f. 5h4(–3h3 + 4h2 – h) |
| g. 2x2(3x3 – 4x + 1) | h. 2a(–a + 5) | i. 5x(–2x + 8) |

**Expanding & Simplifying Algebraic Expressions**

To simplify some expressions, you may have to expand (remove brackets) first, then collect any like terms.

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| Example 1  \*add the opposite  (3x + 5) – (5x – 9) | Example 2  \*distributive law  2m(m + 4) – 9m2 | Example 3  add the opposite  distributive law TWICE!  3(d + 5) – 2d(4 – d) |

**Practice: Expanding & Simplifying Algebraic Expressions**

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| a. (2x – 7 ) + (4x – 5) + 3 | b. 3(4x + 6) + 7x | c. 2(9p + 5) – 8(6p +2) |
| d. 6m + 3(2m + 5) + 7 | e. – (2 + p) + (4p – 7) | f. –6k(k – 4) + 5k(3 – 9k) |
| g. 5x(2x + 3y) – x(3x – 4y) | h. –x(4x + 6) – 7x2 | i. (2x + 7) – (2x + 4) – 3 |
| j. Find an algebraic expression for the area and perimeter of the following: | | |
| ANSWERS: a) 6x -9, b) 19x + 18, c) -30p – 6, d) 12m + 22, e) 3p - 9, f) -51k2 + 39k ,  g) 7x2 + 19xy, h)-11x2 -6x, i) 0, j) A=6x2+15x and P = 10x + 10 | | |