

6.3 Multiplying A Polynomial by a Monomial

*** distributive property

Examples:

$$1. \quad 6(2b + 5) \\ \underline{6(2b) + 6(5)} \\ 12b + 30$$

$$2. \quad -5(2y^2 + 3y) \\ \underline{-5(2y^2) - 5(3y)} \\ -10y^2 - 15y$$

$$3. \quad 4(5x^2 + 3x - 1) \\ \underline{4(5x^2) + 4(3x) + 4(-1)} \\ 20x^2 + 12x - 4$$

$$4. \quad d^2(3d + 6) \\ \underline{d^2(3d) + d^2(6)} \\ 3d^3 + 6d^2$$

Page 1

$$5. \quad m^4(2m^2 - 5m + 1) \\ m^4(2m^2) + m^4(-5m) + m^4(1) \\ (2)(m^4 \cdot m^2) + (-5)(m^4 \cdot m) + (1)(m^4) \\ \underline{2m^6 - 5m^5 + m^4}$$

$$6. \quad 2x^3(3x^2 - 4x + 7) \\ 2x^3(3x^2) + 2x^3(-4x) + 2x^3(7) \\ (2 \cdot 3)(x^3 \cdot x^2) + (2 \cdot -4)(x^3 \cdot x) + (2 \cdot 7)(x^3) \\ \underline{6x^5 - 8x^4 + 14x^3}$$

$$7. \quad a^3b^2(2a^4 - 5ab + b^2) \\ a^3b^2(2a^4) + a^3b^2(-5ab) + a^3b^2(b^2) \\ (2)(a^3a^4)(b^2) + (-5)(a^3a)(b^2b) + (a^3)(b^2b^2) \\ \underline{2a^7b^2 - 5a^4b^3 + a^3b^4}$$

$$8. \quad 3r^2s(6r^2 + 4rs - 10s^2) \\ 3r^2s(6r^2) + 3r^2s(4rs) + 3r^2s(-10s^2) \\ (3 \cdot 6)(r^2r^2)(s) + (3 \cdot 4)(r^2r)(s) + (3 \cdot -10)(r^2)(s^2) \\ \underline{18r^4s + 12r^3s^2 - 30r^2s^3}$$

Page 2

HOMEWORK

Worksheet HW 6.3 - Distributive
Property

Page 3