

Unit 6 Multiplying & Dividing Polynomials

6.2 Multiplying Polynomials by Monomials

Recall distribution from unit 5: multiply all terms inside the brackets by the monomial multiplier

$$\begin{aligned} & 3(3x - 2) \\ & = \boxed{9x - 6} \end{aligned}$$

$$\begin{aligned} & -2(4x^2 - 3x + 1) \\ & = \boxed{-8x^2 + 6x - 2} \end{aligned}$$

We can extend distribution to monomials with variables:

Ex. Multiply:

$$\begin{aligned} \text{a) } & 3x(2x + 4) \\ & = \boxed{6x^2 + 12x} \end{aligned}$$

$$\begin{aligned} \text{b) } & 4x(2x - 1) \\ & = \boxed{8x^2 - 4x} \end{aligned}$$

$$\begin{aligned} \text{c) } & -5x^2(3x^2 - 2x - 4) \\ & = \boxed{-15x^4 + 10x^3 + 20x^2} \end{aligned}$$

$$\begin{aligned} \text{d) } & 2ab^3(a^3 - 3a^2b + 4ab^2 - 1) \\ & = \boxed{2a^4b^3 - 6a^3b^4 + 8a^2b^5 - 2ab^3} \end{aligned}$$