

3.7 Multiplying Polynomials

Use the **DISTRIBUTIVE PROPERTY** to multiply polynomials

- Multiply each term of the first polynomial with each term of the second polynomial.
- Collect like terms and simplify.

Example 1: Expand and Simplify.

a) $-3x(4x+1)$

$$(-3x)(4x) + (-3x)(1)$$

$$-12x^2 + (-3x)$$

$$\boxed{-12x^2 - 3x}$$

c) $3-x(4x^2-3x+1)$

only term being multiplied right now.

$$3 + ((-x)(4x^2) + (-x)(-3x) + (-x)(1))$$

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

$$\boxed{3 - 4x^3 + 3x^2 - x}$$

e) $(x+1)(x-4)$

$$(x+1)(x-4)$$

$$(x)(x) + (x)(-4) + (1)(x) + (1)(-4)$$

$$x^2 - 4x + x - 4$$

$$\boxed{x^2 - 3x - 4}$$

b) $3a(a^2-2a+7)$

$$\{(3a)(a^2) + (3a)(-2a) + (3a)(7)\}$$

$$3a^3 + (-6a^2) + 21a$$

$$\boxed{3a^3 - 6a^2 + 21a}$$

d) $2(x+1) + 3(x-4)$

$$2(x) + 2(1) + 3(x) + 3(-4)$$

$$2x + 2 + 3x - 12$$

$$\boxed{5x - 10}$$

or $x(x-4) + 1(x-4)$

choose 10 questions between # 1-25 ;
choose 10 questions between # 32-58
(skip # 44)