

Lesson 4 : Distributive Property

1) DISTRIBUTIVE PROPERTY

$$a(b+c) = ab + ac$$

expanded form

Examples : EXPAND

$$\begin{aligned} \text{a) } & 5(2x^2 + 3) \\ & = 5(2x^2) + 5(3) \\ & = 10x^2 + 15 \end{aligned}$$

$$\begin{aligned} \text{b) } & -2(6x + y - 4) \\ & = (-2)(6x) + (-2)(y) + (-2)(-4) \\ & = -12x - 2y + 8 \end{aligned}$$

$$\text{c) } \frac{6x + 14}{2}$$

$$= \frac{6x}{2} + \frac{14}{2}$$

$$= 3x + 7$$

2) ADDING & SUBTRACTING POLYNOMIALS

Examples : Expand & Simplify

$$\begin{aligned} \text{a) } & 1(5x + 4) + (2x - 8) - (x - 1) \\ & = \underline{5x} + \underline{4} + \underline{2x} - \underline{8} - \underline{x} + \underline{1} \\ & = 6x - 3 \end{aligned}$$

$$b) -5(3x-4y+6) - \frac{1}{2}(-6x+4y+8)$$

$$= \underline{-15x + 20y - 30} + \underline{3x - 2y - 4}$$

$$= -12x + 18y - 34$$

$$a(b+c) = (a+b)c$$

Example: Expand

$$2(x+3) = 2x + 6$$

$$(x-1)(x+2) = x^2 + x - 2$$

$$3x + 12$$

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

$$3x + 12$$

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$$(x-1)(x+2) = x^2 + x - 2$$