

Warm-up

Simplify

① $-2 \cdot (9a - d)$

$-2 \cdot 9a \quad -2 \cdot -1d$

$-18a + 2d$

② $r^2 \cdot s \cdot r \cdot s^3$

$r^{2+1} \quad s^{1+3}$

$r^3 s^4$

③ $4x^1 \cdot -5x^2$

$4 \cdot -5 \quad x^{1+2}$

$-20x^3$

9.2 Multiplying Polynomials

* Share & distribute

$$2x^3 \cdot (x^3 + 3x^2 - 2x + 5)$$

$$2x^3 \cdot x^3 + \underline{2x^3 \cdot 3x^2} + \underline{2x^3 \cdot -2x} + \underline{2x^3 \cdot 5}$$

$$2x^6 + 6x^5 - 4x^4 + 10x^3$$

You try

$$-3x^2 (2x^2 - 10x + 7)$$

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

Double distribute

* The x multiplies $(3x+2)$

* Then -4 multiplies $(3x+2)$

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

$$3x^2 + 2x - 12x - 8$$

$$3x^2 - 10x - 8$$

You try

$$(3a+4)(a-2)$$

$$3a^2 - 6a + 4a - 8$$

$$3a^2 - 2a - 8$$

Homework

$$\textcircled{3} \quad x(2x^2 - 3x + 9)$$

$$\textcircled{8} \quad -5b^3(4b^5 - 2b^3 + b - 11)$$

$$\textcircled{9} \quad (x+2)(x-3)$$

$$\textcircled{13} \quad (3k-1)(4k+9)$$

* special

$$\textcircled{24} \quad (4y-3)(y^2 + 8y - 6)$$

$$\textcircled{47} \quad (x^2 y z^2 + 9y)(17xy^2 - 23z^{10})$$