

Simplifying Polynomials Part 1**Warm Up:** 1. Determine whether each pair of terms are “like” or “unlike”.

Terms	Like	Unlike
x, 2x	✓	
x, x <sup>2</sup>		✓
ab, 2ab	✓	
a <sup>2</sup> b, ab <sup>2</sup>		✓

2. Group the following into like terms.

$6a^2b^2$

$5x$

$5mn$

$-5$

$2x^3$

$7a^5$

$4a^5$

$-3a^2b^2$

$-3x$

$-2x^3$

$-3mn$

$5m^2n$

COLLECTING LIKE TERMS

- Add or subtract like terms only
- Apply integer rules to the coefficients of like terms and keep the variable-part the same.

Examples: Simplify. (Collect like terms.)

$$\begin{aligned} \text{a) } & 5x - 3x \\ & = 2x \end{aligned}$$

$$\begin{aligned} \text{b) } & -2x^3 + 2x^3 \\ & = 0x^3 \\ & = 0 \end{aligned}$$

$$\begin{aligned} \text{c) } & \underline{5x} + 2 + \underline{3x} + 4 \\ & = 2x + 6 \end{aligned}$$

$$\begin{aligned} \text{d) } & \underline{4m} - 3 - \underline{m} + 4 \\ & = 3m + 1 \end{aligned}$$

$$\begin{aligned} \text{e) } & \underline{3x^2} + 5 + 4 - \underline{\frac{1}{2}x^2} \\ & = \frac{6}{2}x^2 - \frac{1}{2}x^2 + 9 \\ & = \frac{5}{2}x^2 + 9 \end{aligned}$$

$$\begin{aligned} \text{f) } & \underline{3a^2} - 2ab - 2b^2 - ab + b^2 - \underline{2a^2} \\ & = a^2 - 3ab - b^2 \end{aligned}$$

$$\begin{aligned} \text{g) } & \underline{2m^3n^2} + \frac{3m^2n^3}{2} - \underline{m^3n^2} - \frac{1}{2}m^2n^3 \\ & = m^3n^2 + \frac{3}{2}m^2n^3 - \frac{1}{2}m^2n^3 \\ & = m^3n^2 + m^2n^3 \end{aligned}$$

NOTE:  $\frac{3m^2n^3}{2} = \frac{3}{2}m^2n^3$

U2D5 HW: Page 151-152 #1-3,5-9

Challenge: page 153 #17