

# Combining Like Terms Polynomial Practice

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Question 1

Simplify

I.  $5x^2 + x + 6x^2$

V.  $\frac{1}{6}x^3 + 3x^2 - \frac{1}{3}x^3 + 7 + x^2 - 10$

II.  $3x^4 - 2x + 2x + x^4$

VI.  $9x^5 + 3x^2 - 2x^5 - 3x^2$

III.  $10x^2 + 2x^3 - 3x^3 - 4x^2 - 6x^2 - x^4$

VII.  $5y + 7y^2 - 3y$

IV.  $8.3x^2 + 3.7x - 8 - 9.4x^2 + 1.6x + 0.5$

VIII.  $5z + 7z^2 + 3z$

# Combining Like Terms Polynomial Practice

Name: Key

Date: \_\_\_\_\_

## Question 1

Simplify

I.  $5x^2 + x + 6x^2$

$$5x^2 + x + 6x^2 \xrightarrow{\text{descending order}} 5x^2 + 6x^2 + x$$

$$\downarrow \text{combine}$$

$$11x^2 + x$$

II.  $3x^4 - 2x + 2x + x^4$

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

$$\downarrow \text{sum form}$$

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

$$\downarrow \text{descending order}$$

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

$$\downarrow \text{combine}$$

$$4x^4$$

III.  $10x^2 + 2x^3 - 3x^3 - 4x^2 - 6x^2 - x^4$

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

$$\downarrow \text{sum form}$$

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

$$\downarrow \text{descending order}$$

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

$$\downarrow \text{combine}$$

$$-x^4 + -1x^3$$

IV.  $8.3x^2 + 3.7x - 8 - 9.4x^2 + 1.6x + 0.5$

$$8.3x^2 + 3.7x - 8 - 9.4x^2 + 1.6x + 0.5$$

$$\downarrow \text{sum form}$$

$$8.3x^2 + 3.7x + -8 + -9.4x^2 + 1.6x + 0.5$$

$$\downarrow \text{descending order}$$

$$8.3x^2 + -9.4x^2 + 3.7x + 1.6x + 0.5 + -8$$

$$\downarrow \text{combine}$$

$$-1.1x^2 + 5.3x + -7.5$$

V.  $\frac{1}{6}x^3 + 3x^2 - \frac{1}{3}x^3 + 7 + x^2 - 10$

$$\downarrow \text{sum form}$$

$$\frac{1}{6}x^3 + 3x^2 + \frac{-1}{3}x^3 + 7 + x^2 + -10$$

$$\downarrow \text{descending order}$$

$$\frac{1}{6}x^3 + \frac{-1}{3}x^3 + 3x^2 + x^2 + 7 + -10$$

$$\downarrow \text{prepare fractions}$$

$$\frac{1}{6}x^3 + \frac{-2}{6}x^3 + 3x^2 + x^2 + 7 + -10 \rightarrow \frac{-1}{6}x^3 + 4x^2 + -3$$

VI.  $9x^5 + 3x^2 - 2x^5 - 3x^2$

$$9x^5 + 3x^2 - 2x^5 - 3x^2$$

$$\downarrow \text{sum form}$$

$$9x^5 + 3x^2 + -2x^5 + -3x^2$$

$$\downarrow \text{descending order}$$

$$9x^5 + -2x^5 + 3x^2 + -3x^2$$

$$\downarrow \text{combine}$$

$$7x^5$$

VII.  $5y + 7y^2 - 3y$

$$5y + 7y^2 - 3y$$

$$\downarrow \text{sum form}$$

$$5y + 7y^2 + -3y$$

$$\downarrow \text{descending order}$$

$$7y^2 + 5y + -3y$$

$$\downarrow \text{combine}$$

$$7y^2 + 2y$$

VIII.  $5y + 7y^2 + 3y$

$$5y + 7y^2 + 3y$$

$$\downarrow \text{descending order}$$

$$7y^2 + 5y + 3y$$

$$\downarrow \text{combine}$$

$$7y^2 + 8y$$