

Name: _____

Date: _____

CW # 3-4: Algebra 1 - Sections 10-1 to 10-4: Operations on Polynomials

50 points

1. Write a mathematical expression that is not a polynomial and explain why it is not a polynomial.

Answers will vary:

Ex: $3x^{-5}$ or $\frac{3}{x^6}$ or $x^{\frac{3}{4}}$

Neg Exponent in numerator
Positive Exponent in denominator
Rational Exp.

2. Write an example of a monomial, a binomial, and a trinomial.

a) $3x$

b) $3x+5$

c) $3x^2+5x+7$

3. Add or subtract each. Write answers in standard form:

a. $(-5x^2 - 1x + 4) + (-3x^2 - 5x + 2)$

$-8x^2 - 6x + 6$

b. $(8x^2 - 3x) - (5x - 5 - 8x^2)$

$16x^2 - 8x + 5$

c. $(3x^3 + 3x^2 + 9) - (5x^3 - 7x^2 + 6x - 9)$

$-2x^3 + 10x^2 - 6x + 18$

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4. Multiply and simplify each. Write answers in standard form:

$$\begin{aligned} \text{a. } & (3x^1 - 7)(3x^1 + 7) \\ & 9x^2 + 21x - 21x - 49 \\ & \boxed{9x^2 - 49} \end{aligned}$$

$$\begin{aligned} \text{b. } & -4x^2y(x^2 + 7xy^1 - 6y^3) \\ & \boxed{-4x^4y - 28x^3y^2 + 24x^2y^4} \end{aligned}$$

$$\begin{aligned} \text{c. } & (4x+3)^2 \\ & (4x+3)(4x+3) \\ & 16x^2 + 12x + 12x + 9 \\ & \boxed{16x^2 + 24x + 9} \end{aligned}$$

$$\begin{aligned} \text{d. } & 2x^3(9x^2 + 5y) \\ & \boxed{18x^5 + 10x^3y} \end{aligned}$$

$$\text{e. } (8x^3y^2)(-3x^2y^3)$$

$$\boxed{-24x^5y^5}$$

$$\text{f. } (2x^1 - 5)(5x^2 + 4x^1 + 7)$$

$$\begin{aligned} & 10x^3 + 8x^2 + 14x - 25x^2 - 20x - 35 \\ & \boxed{10x^3 - 17x^2 - 6x - 35} \end{aligned}$$

$$\text{g. } (2x^1 - 3)(4x^2 + 8x^1 - 2)$$

$$\begin{aligned} & 8x^3 + 16x^2 - 4x - 12x^2 - 24x + 6 \\ & \boxed{8x^3 + 4x^2 - 28x + 6} \end{aligned}$$

$$\text{h. } (4x^1 - 3)(3x^1 - 5)$$

$$\begin{aligned} & 12x^2 - 20x - 9x + 15 \\ & \boxed{12x^2 - 29x + 15} \end{aligned}$$

$$\text{i. } (3x^1 - 1)(x^1 + 5)$$

$$\begin{aligned} & 3x^2 + 15x - 1x - 5 \\ & \boxed{3x^2 + 14x - 5} \end{aligned}$$

$$\text{j. } -9(6m - 3) + 6(1 + 4m)$$

$$\begin{aligned} & -54m + 27 + 6 + 24m \\ & \boxed{-30m + 33} \end{aligned}$$