

Name: _____ Period: _____ Date: _____

Polynomials



Part I: Write the definition in your own words.

Polynomial-

Many term

Standard Form-

Highest power
to lowest power

power = degree

Part II: Find the sum or difference.

1. 6 muffins + 5 muffins = 11 muffins

2. 3 cakes plus 9 cakes = 12 cakes

3. 8 cupcakes plus 4 strawberries minus 2 cupcakes

6 cupcakes
4 strawberries

Part III: Let's shorten it! Find the sum or difference.

4. $7m + 3m = 10m$

5. $14c - 20c = -6c$

6. $5c + 6s - 2c = 3c + 6s$

Part IV: Let's do more!

7. $b^2 + 3b^2 = 4b^2$

8. $(13p^4 + 9p^2 - 6p^2) + (3q + 4p^4)$

$13p^4 + 9p^2 - 6p^2 + 3q + 4p^4$

$17p^4 + 3p^2 + 3q$

9. $8d^3 - (2d^3 + 4d)$

$8d^3 - 2d^3 - 4d$

$6d^3 - 4d$

10. $(13t^4 + 9r^2 - 6t^2) - (3t - 12r)$

$13t^4 + 9r^2 - 6t^2 - 3t + 12r$

$13t^4 + 9r^2 - 6t^2 + 12r - 3t$

Find the sum.

$$\textcircled{1} (-2x - 9) + (x + 4) = \boxed{-2x - 9} + \boxed{x + 4} = \boxed{-x - 5}$$

$$\textcircled{2} (-5x + 17) + (-9x + 4) = \boxed{-5x + 17} + \boxed{-9x + 4} = \boxed{-14x + 21}$$

$$\textcircled{3} (3x^2 - 2x + 1) + (6x^2 + 3x) = \boxed{3x^2 - 2x + 1} + \boxed{6x^2 + 3x} = \boxed{9x^2 + x + 1}$$

$$\textcircled{4} (6x^3 - 12x + 1) + (8x^2 + 10x - 6) = \boxed{6x^3 - 12x + 1} + \boxed{8x^2 + 10x - 6} = \boxed{6x^3 + 8x^2 - 2x - 5}$$

$$\textcircled{5} 5(4x^3 - 2x^2 + 1) + 3(7x^2 - 5x - 4) = \boxed{20x^3 - 10x^2 + 5} + \boxed{21x^2 - 15x - 12} = \boxed{20x^3 + 11x^2 - 15x - 7}$$

‡ Adding ‡

Find the difference.

$$\textcircled{1} (7x + 10) - (3x - 8) = \boxed{7x + 10} - \boxed{3x - 8}$$
$$4x + 18$$

$$\textcircled{2} (-14x + 3) - (-2x + 5)$$
$$\boxed{-14x + 3} + \boxed{2x - 5} \quad -12x - 2$$

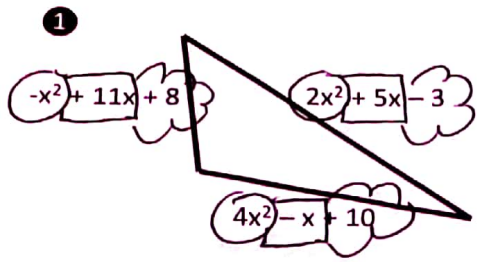
$$\textcircled{3} (5x^2 + 3x + 8) - (2x^2 - 2x - 9)$$
$$\boxed{5x^2 + 3x + 8} - \boxed{2x^2 - 2x - 9}$$
$$3x^2 + 5x + 17$$

$$\textcircled{4} (4x^3 + x^2 - 9x - 8) - (7x^3 + 2x + 6)$$
$$\boxed{4x^3 + x^2 - 9x - 8} - \boxed{7x^3 + 2x + 6}$$
$$-3x^3 + x^2 - 11x - 14$$

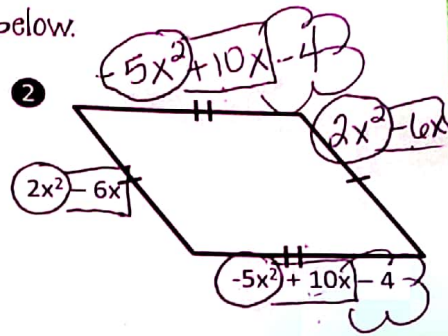
$$\textcircled{5} -7(2x^4 + 3x^3 + x - 1) - 5(-3x^3 + 4x^2 + 8x - 6)$$
$$\boxed{-14x^4 - 21x^3 - 7x + 7} + \boxed{15x^3 - 20x^2 - 40x + 30}$$
$$-14x^4 - 6x^3 - 20x^2 - 47x + 37$$

- Subtracting -

Add all sides
Find the perimeter of each figure below.



$$5x^2 + 15x + 15$$



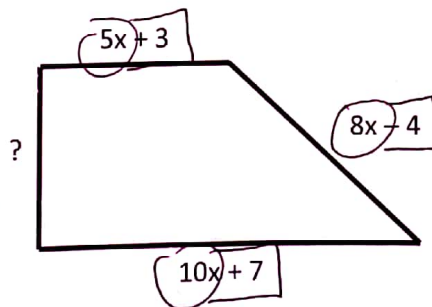
$$-6x^2 + 8x - 8$$

$$P = 2(2x^2 - 6x) + 2(-5x^2 + 10x - 4)$$

$$P = 4x^2 - 12x - 10x^2 + 20x - 8$$

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

3 If the perimeter of the quadrilateral shown below is $29x + 5$, what is the length of the missing side?



① Add the sides

② Subtract from perimeter

$$23x + 6$$

$$(29x + 5) - (23x + 6)$$

$$29x + 5 - 23x - 6$$

$$6x - 1$$

Geometry Applications