

Pre-Algebra

Unit 16 Review - Polynomial Operations

Practice Problem Set

Perform the indicated operation. Represent all final answers as a simplified polynomial expression written in standard form.

1. $5x - 6 + 10x + 5x^2 - 3$

$$\boxed{5x^2 + 15x - 9}$$

2. $(\cancel{2x^2} + 3x - 1) + (7x - \cancel{2x^2})$

$$\boxed{10x - 1}$$

3. $(2a)(3a^2)(4a)$

$$\boxed{24a^4}$$

4. $-3x^2(3x^2 - 9x + 5)$

$$\boxed{-9x^4 + 27x^3 - 15x^2}$$

5. $(5x^2 + 12x) - (7x - 4)$

$$\boxed{5x^2 + 5x + 4}$$

6. $\frac{\cancel{20}b^4c^3}{5ac}$

$$\boxed{4b^4c^2}$$

7. $(2x + 1)(x - 4)$

$$2x^2 - 8x + 1x - 4$$

$$\boxed{2x^2 - 7x - 4}$$

8. $(x + 7)(x - 7)$

$$\boxed{x^2 - 49}$$

9. $(6x - 1)^2$

$$(6x - 1)(6x - 1)$$

$$36x^2 - 6x - 6x + 1$$

$$\boxed{36x^2 - 12x + 1}$$

10. $\frac{\cancel{20}b^5c^3 - \cancel{10}a^2b + \cancel{5}ab}{\cancel{5}ab^1 \cancel{5}ab \cancel{5}ab}$

$$\boxed{4b^4c^3 - 2a + 1}$$

11. $(6x^3 + 7x) - (3x^2 + 5) + (x^2 - 10x - 1)$

$$6x^3 + 7x - 3x^2 - 5 + x^2 - 10x - 1$$

$$\boxed{6x^3 - 2x^2 - 3x - 6}$$

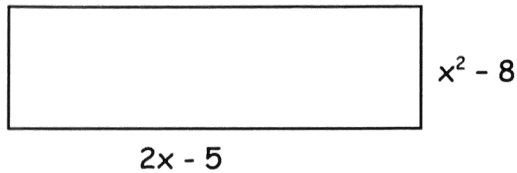
12. Subtract $3x^2 - 2x + 1$ from $10x - 3$

$$(10x - 3) - (3x^2 - 2x + 1)$$

$$10x - 3 - 3x^2 + 2x - 1$$

$$\boxed{-3x^2 + 12x - 4}$$

14. Find the perimeter and area of the following rectangle.



$$P: \underbrace{(x^2 - 8)} + \underbrace{(x^2 - 8)} + \underbrace{2x - 5} + \underbrace{2x - 5}$$

$$2x^2 + 4x - 26$$

$$A: (x^2 - 8)(2x - 5)$$

$$2x^3 - 5x^2 - 16x + 40$$

15. Perform the indicated operations. Remember PEMDAS.

$$a) \frac{8x^9y^3}{x^2(4x^5y)} \quad \frac{8x^9y^3}{4x^7y^1}$$

$$2x^2y^2$$

$$b) (x - 9)(x + 9) - (4x + 5)(4x - 5)$$

$$(x^2 - 81) - (16x^2 - 25)$$

$$x^2 - 81 - 16x^2 + 25$$

$$-15x^2 - 56$$

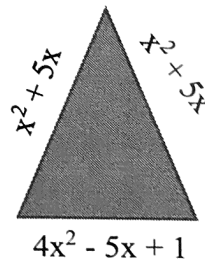
$$c) -3x(7x - 6) - 5(11x^2 + 9x - 3)$$

$$-21x^2 + 18x - 55x^2 - 45x + 15$$

$$-76x^2 - 27x + 15$$

16.) Find the perimeter of the triangle.

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



$$6x^2 + 5x + 1$$