

Math 9 Lesson 2: Polynomials (solutions)

- Operations with polynomials with degree less than or equal to 2
- Variables, degree, number of terms, and coefficients, including the constant term
- $(x^2 + 2x - 4) + (2x^2 - 3x - 4)$
- $(5x - 7) - (2x + 3)$
- $2x(x + 7)$
- $(15k^2 - 10k) \div (5k)$
- Using algebra tiles
- $3x(x - 4) = 3x^2 - 12x$

1. $3a + 5a$
 $8a$

2. $x + 2x$
 $3x$

3. $5x - 7x$
 $-2x$

4. $3x^2 - 2x^2 + x + 9x$
 $x^2 + 10x$

5. $2x(x - 5)$
 $2x^2 - 10x$

6. $(3x - 2) - (5x + 1)$
 $-2x - 3$

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

8. $3x(2 - 3x + 4x^2)$
 $12x^3 - 9x^2 + 6x$

9. $(x^2 + 3x - 2) - (2x^2 - 5x - 7)$
 $-x^2 + 8x + 5$

10. $(15k^2 - 10k) \div 5k$
 $3k - 2$

11. $\frac{4x^2}{2x}$
 $2x$

12. $\frac{3}{4}x + \frac{x}{4}$
 x

$$13. \frac{x}{2} - \frac{x}{5}$$

$$\frac{3}{10}x$$

$$14. \frac{3x}{2} - \frac{x}{7}$$

$$\frac{19}{14}x$$

$$15. \frac{2t}{5} - 3t$$

$$-\frac{13}{5}t$$

$$16. \frac{-15xy^3 - 10x^2y^2}{5xy^2}$$

$$-3y - 2x$$

$$17. -\frac{4a^2b - 8ab^3}{2ab}$$

$$-2a + 4b^2$$

$$18. x^3 - 2x^2 + 3x - (x^3 + x^2 - 5x)$$

$$-3x^2 + 8x$$

$$19. -2(2a^3 + 4a^2) + a - (3a^2 - 4a^3)$$

$$-4a^3 - 8a^2 + a - 3a^2 + 4a^3$$

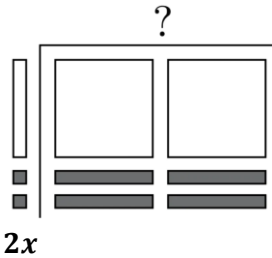
$$-11a^2 + a$$

$$20. \frac{1}{2}(4x^2 - 8x + 12) - \frac{2}{3}(6x^2 + 12x - 3)$$

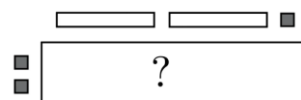
$$2x^2 - 4x + 6 - 4x^2 - 8x + 2$$

$$-2x^2 - 12x + 8$$

21. Complete the following algebra tile diagram:



22. Complete the following algebra tile diagram:



23. The polynomial $P(x) = 6x^5 + 5x^4 - 3x^2 + x^7 + 2$

a. How many terms are in this polynomial?

5

b. What is the coefficient of the x^5 term?

6

c. Find the degree of this polynomial

7

d. Find the constant term

2

24. What is the degree of the following polynomial? $5x^3y^2 + 3x - 2$

5