

Name _____

Date _____

1. What type of polynomial is $4z^4 - 11z^2 + 25z - 18$?
 - a) monomial
 - b) binomial
 - c) trinomial
 - d) four-term polynomial
 - e) not a polynomial

2. What is the degree of the monomial $-2x^3y^4z$?
 - a) 4
 - b) 7
 - c) 8
 - d) 12
 - e) 16

3. Which expression is equivalent to $5c^3 + 2d^3 - 3c^3$?
 - a) $c^3 + 2d^3$
 - b) $2c^6 - 2d^3$
 - c) $4c^3d^3$
 - d) $2(c^3 + d^3)$
 - e) $2c^3 + d^3$

4. Which expression is equivalent to $(-4x + 3y - 7) + (4x - y + 10)$?
 - a) $2y - 17$
 - b) $-8x - 4y + 3$
 - c) $-4x^2 - 3y^2 + 3$
 - d) $-16x - 3y - 70$
 - e) $2y + 3$

5. Find the expression equivalent to $(5x^3 + 2x^2 - 3x + 9) + (7x^3 - 3x^2 - 2x + 2)$.
 - a) $12x^3 - x^2 - 5x + 11$
 - b) $12x^3 + 5x^2 + 5x + 11$
 - c) $12x^6 - x^4 - 5x^2 + 11$
 - d) $12x^6 + 5x^4 + 5x^2 + 11$
 - e) $12x^9 - x^4 + 5x + 11$

6. Find the difference between $(5x - 3y - z)$ and $(-2x + y - 3z)$.
 - a) $-7x + 4y - 2z$
 - b) $3x + 2y + 2z$
 - c) $7x - 2y - 4z$
 - d) $7x - 4y + 2z$
 - e) $3x^2 + 2y^2 + 2z^2$

7. Simplify the expression $m^6 \cdot m^2$.
 - a) m^8
 - b) $2m^8$
 - c) m^{12}
 - d) $2m^{12}$
 - e) m^{36}

8. Simplify the expression $2m(5m + 3)$.
 - a) $9m$
 - b) $3m + 6$
 - c) $10m^2 + 3$
 - d) $10m^2 + 6m$
 - e) $16m^2$

Name _____

Date _____

9. Simplify: $(r - 4)(r + 6)$

a) $2r + 2$

b) $2r - 24$

c) $r^2 + 2$

d) $r^2 - 2r - 24$

e) $r^2 + 2r - 24$

10. Simplify the expression $(2x - 1)(x^2 + 3x - 8)$.

a) $x^2 + 5x - 9$

b) $x^2 + 6x + 8$

c) $2x^3 + 3x + 8$

d) $2x^3 + 5x^2 - 11x + 8$

e) $2x^3 + 5x^2 - 19x + 8$

11. Simplify the expression
 $(3x^2 - 8)(x^3 + 5x^2 + 2x - 1)$.

a) $x^3 + 8x^2 + 2x - 9$

b) $x^3 + 15x^2 + 2x + 8$

c) $3x^5 + 15x^4 + 6x^3 - 16x + 8$

d) $3x^5 + 15x^4 - 2x^3 - 43x^2 - 16x + 8$

e) $4x^5 + 8x^4 - 2x^3 - 5x^2 - 6x - 9$

Part 2.

12. Simplify the expression
 $(a^2 + 2a - 6) - (3a^2 + 4a - 1)$.13. Simplify the expression $(x + 11)(x - 3)$.

1. What property justifies $a + 9 = 9 + a$?
 - a) Commutative Property of Multiplication
 - b) Associative Property of Addition
 - c) Distributive Property
 - d) Commutative Property of Addition
 - e) Associative Property of Multiplication

2. What property justifies the statement $5 + (6 + x) = (5 + 6) + x$?
 - a) Commutative Property of Multiplication
 - b) Associative Property of Addition
 - c) Distributive Property
 - d) Commutative Property of Addition
 - e) Associative Property of Multiplication

3. In the equation, $\frac{1}{7} \times (\frac{1}{8} \times \frac{3}{4}) = (\frac{1}{7} \times \frac{1}{8}) \times \frac{3}{4}$, which property is demonstrated?

NAME THE PROPERTY AND EXPLAIN HOW YOU RECOGNIZED IT.

4. The x-values represent the number of products produced by a company. As shown on the graph, the function $y = f(x)$ is the cost of each product produced, and the function $y = g(x)$ is the profit of each of the products produced.

One year, the company broke even (cost = income). How many products were produced the year they broke even? PLEASE EXPLAIN HOW YOU FOUND YOUR ANSWER IN WORDS.

