

Math 9: Polynomials Test

Multiple Choice

- How many terms are in the polynomial $12x^2 + 6x - 13$?
a. 12 b. 3 c. 13 d. 1
- Name the coefficients of the variable in the polynomial $-2x^2 + 4x - 6$.
a. -2, 4 b. 2, 4 c. -2 d. -2, -6
- Combine like terms. Sketch algebra tiles if it helps.
 $10x^2 - 6x + 2x - 8x^2$
a. $2x^2 - 4x$ b. $2x^2 + 4x$ c. $62x^2$ d. $4x^2 - 6x$
- Simplify: $5x + 4 - 6 + 3x$
a. $8x + 2$ b. $6x$ c. $9x - 3$ d. $8x - 2$
- From the list, which terms are like $3x$?
 $3x^2, 8x, 4, -9x, -3x, 6x^2, 3$
a. $8x, -9x, -3x$ c. $-3x$
b. $3x^2, 3$ d. $3x^2, -3x, -3x^2$
- From the list, which terms are like $-7x^2$?
 $7x^2, 7x, 4x^2, -7, -9, -7x, -6x^2$
a. $7x^2$ c. $7x^2, 7x, -7, -7x$
b. $7x^2, 7x, -7x$ d. $7x^2, 4x^2, -6x^2$
- Add: $(5x - 7) + (-2x - 5)$
a. $3x - 12$ b. $3x + 2$ c. $3x - 2$ d. $7x - 12$
- Subtract: $(6x - 5) - (11x - 12)$
a. $-5x + 17$ b. $-5x - 7$ c. $-5x - 17$ d. $-5x + 7$

9. A large white square represents an x^2 -tile, a black rectangle represents a $-x$ -tile, and a small white square represents a 1-tile.

Write the polynomial represented by this set of algebra tiles.



- a. $2x^2 - x^3 + 4$ b. $2x^2 - 3x + 4$ c. $2x - 3x^2 + 4$ d. $-2x^2 + 3x + 4$
10. Which of the following expressions are polynomials?
- i) $\frac{1}{2}x$
 ii) $1 - 5.5n^2$
 iii) $2\sqrt{t}$
 iv) $3.5p^3$
- a. i, ii, and iv b. i, ii, and iii c. i, iii, and iv d. ii and iv
11. Which of the following expressions is a binomial with degree 2?
- i) $x^2 - 12x + 5$
 ii) $3x^2$
 iii) $8x^2 - 2x$
 iv) $\frac{1}{x^2} - 7$
- a. iii b. ii c. iv d. i
12. Which of the following expressions are monomials with degree 2?
- i) $2x^2 + 2x$
 ii) $2x^2$
 iii) x^2
 iv) $2x$
- a. ii and iii b. ii and iv c. iii and iv d. i and ii

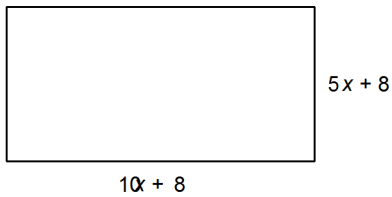
Short Answer

13. Simplify: $-3x^2 + 2 - 7x + 4 - 2x^2 + 4x$

14. Add: $(6p^2 + 5q^2 - pq) + (8pq - 9q^2 + 2p^2)$

15. Subtract: $(5y^2 - 2x^2 + 5x - 9) - (2y^2 - 6x^2 - 9x - 8)$

16. Write the perimeter of this rectangle as a polynomial in simplest form.



17. Is each expression a monomial, binomial, or trinomial?

a) $7x^2 - 4x$

b) $4x^2$

c) $4 - 9x + 7x^2$

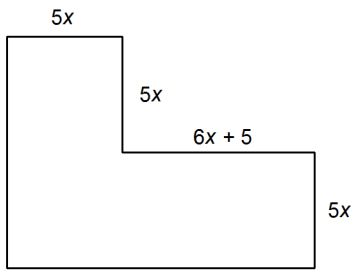
d) $5x^2 - 11$

e) $5x^3 - 9x$

Problem

18. Simplify: $(3x + 9y - 3z) + (6x - 2y + 3z) - (4x - 3y - 7z)$

19. a) Determine a polynomial for the perimeter of the shape below.



**Math 9: Polynomials Test
Answer Section****MULTIPLE CHOICE**

1. B
2. A
3. A
4. D
5. A
6. D
7. A
8. D
9. B
10. A
11. A
12. A

SHORT ANSWER

13. $-5x^2 - 3x + 6$
14. $8p^2 - 4q^2 + 7pq$
15. $3y^2 + 4x^2 + 14x - 1$
16. $30x + 32$
17.
 - a) Binomial
 - b) Monomial
 - c) Trinomial
 - d) Binomial
 - e) Binomial

PROBLEM

18. $(3x + 9y - 3z) + (6x - 2y + 3z) - (4x - 3y - 7z)$
 $= 3x + 9y - 3z + 6x - 2y + 3z - 4x + 3y + 7z$
 $= 3x + 6x - 4x + 9y - 2y + 3y - 3z + 3z + 7z$
 $= (3 + 6 - 4)x + (9 - 2 + 3)y + (-3 + 3 + 7)z$
 $= 5x + 10y + 7z$

19. a) Perimeter = $5x + 5x + (6x + 5) + 5x + (6x + 5) + 5x + 5x + 5x$
= $42x + 10$

b) Area = $5x(5x) + 5x(5x + 6x + 5)$
= $25x^2 + 25x^2 + 30x^2 + 25x$
= $80x^2 + 25x$

c) Perimeter:
Substitute $x = 4$ into $42x + 10$.
 $42x + 10$
= $42(4) + 10$
= 178
The perimeter of the shape is 178 cm.

Area:
Substitute $x = 4$ into $80x^2 + 25x$.
 $80x^2 + 25x$
= $80(4)^2 + 25(4)$
= 1380
The area of the shape is 1380 cm².