

Name _____ Period _____ Date _____

Vocabulary: Define each word and give an example.

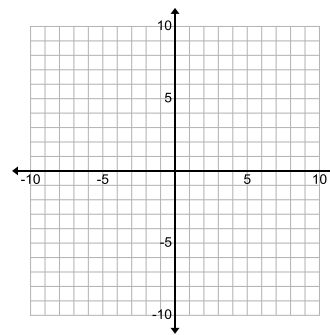
- Degree of a Polynomial
- GCF

Short Answer:

- Show the sum and difference pattern for multiplying two binomials.
- Describe how to determine if the polynomial $ax^2 + bx + c$ is factorable.

Review:

- Simplify the expression: $2\sqrt{12} + 3\sqrt{72} - \sqrt{2}$
- Evaluate the expression. Write your final answer in scientific notation. $(4 \times 10^6)(3 \times 10^8)$
- Write the equation of the line that passes through the points $(5, -2)$ and $(-1, -3)$ in standard form with integer coefficients.
- Graph the line $5x - 10 = 2y$.



Problems:

Be sure to show all work used to obtain your answer. Circle or box in the final answer.

- Classify the polynomials by their degree and number of terms.
 - $1 - 4x^2 + 2x^4$
 - $4x - 5$

10. Find the sum or difference of the polynomials.

a. $(-b^2 + 3b) + (4b^2 - 8b - 5)$

b. $(4p^3 + p^2 - 1) - (2 - p - p^2)$

11. Find the product. Write your answer in standard form.

a. $-6x^3(x^2 - 3x + 2)$

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

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

d. $(-4x^2 + x - 1)(x + 4)$

e. $(5y - 2x)(5y + 2x)$

f. $(5 - 3x)^2$

12. Write an expression for the *perimeter* of a rectangle with a length of $(3x + 5)$ and a width of $(2x + 1)$.

13. Find the GCF of the terms: $35a^4b^8$, $49a^2b^5$, $14ab^4$

14. Factor the GCF in the polynomial. $4x^5 + 8x^3 - 2x^2$

15. Factor the trinomials.

a. $x^2 - 11x + 30$

b. $6x^2 + 4x - 10$

16. Factor the polynomials.

a. $169 - 9y^2$

b. $16x^2 + 24x + 9$

17. Factor the expressions completely.

a. $16x^2 - 36$

b. $9 - 18x + 9x^2$

c. $-30b^4 + 58b^3 - 24b^2$

d. $3x^3 - 15x^2 - 6x + 30$

Multiple Choice Section: **Circle the best answer.**

18. The function $g(x)$ is the amount of money Shawn has in the bank at the beginning of the month. The function $f(x)$ is the amount of money withdrawn from the account during the month. Which expression represents the amount of money left at the end of the month?

$$f(x) = x^2 - 3x + 12$$

$$g(x) = 6x^2 - 2x + 20$$

- A. $5x^2 - 5x + 8$
- B. $5x^2 + x + 8$
- C. $-5x^2 - x - 8$
- D. $-5x^2 - 5x + 8$

19. Which expression below represents the product of $(5x + 6)$ and $(2x - 5)$?

- A. $10x^2 - 37x - 30$
- B. $10x^2 - 13x - 30$
- C. $10x^2 + 13x - 30$
- D. $10x^2 + 37x - 30$

20. Expand the expression: $(2x - 7)^2$

- A. $4x^2 - 49$
- B. $4x^2 + 49$
- C. $4x^2 - 28x + 49$
- D. $4x^2 + 28x + 49$