

Name _____ Date _____

Chapter 7
College Prep Mathematics

Review for Test

Write the polynomial in standard form. Identify the degree and leading coefficient of the polynomial. Then classify the polynomial by the number of terms.

1. $3x + 5x^2 - 7x + 5$

Standard Form: _____

Degree: _____

Leading Coefficient: _____

Classify: _____

2. $-5b^3$

Standard Form: _____

Degree: _____

Leading Coefficient: _____

Classify: _____

3. $20z^4 - z^7 + \frac{2}{3}z$

Standard Form: _____

Degree: _____

Leading Coefficient: _____

Classify: _____

4. $-\frac{3}{7}a^2 + \frac{4}{5}a^5$

Standard Form: _____

Degree: _____

Leading Coefficient: _____

Classify: _____

Directions: Find the sum or difference. Show your work!

5. $-5(4b^3 - 5b) - (3b^4 - b^3)$

6. $(-3x + 4x^2) + (-12x^3 + 7x)$

7. $(2 - 3x) + (14x - 7x^2 - 5)$

8. $(5 - 6y - 4y^2) - (-2y^2 + 5y + 12y^3)$

Directions: Find the product. Show your work!

9. $(5 - a)(a^2 - 3a - 10)$

10. $(1 - 5c)(2c + 6)$

11. $2x(3x + 1)(x^2 + 4x)$

12. $5(p - 3)^2$

13. A rectangular picture is 6 centimeters longer than it is wide. A frame 1 centimeter wide is placed around the picture.

a. Write a polynomial that represents the perimeter of the frame.

b. Write a polynomial that represents the area of the frame.

c. Find the perimeter of the frame if the picture is 15 centimeters wide?

Directions: Factor the polynomial completely. Show your work!

14. $10nm^3 - 15n^2m$

15. $4x^2 + 2xy - 2y^2$

16. $3p^3 + 9p^2 - 210p$

17. $-5x^2 + 15x + 140$

18. $5x^3 - 125x$

19. $6ab + 12a^2 - 7xb - 14xa$

Directions: Solve the equation. Show your work!

22. $2p^2 + 24 = -16p$

23. $9m^2 - 1 = 0$

24. $-3x^2 + x^3 = 4x$

25. $x^4 - 5x^2 + 4 = 0$

26. An object is launched at 9.8 meters per second from a 73.5-meter tall platform. The object's height s (in meters) after t seconds is given by the equation $s(t) = -4.9t^2 - 9.8t + 73.5$. When does the object strike the ground?
27. You are designing an aquarium for your new office. The dimensions of the aquarium are restricted as shown in the diagram below.
- a. Write a polynomial expression that represents the volume of the aquarium according to the specified dimensions.
- b. You need the aquarium to hold 17,640 cubic inches of water. Find the possible dimensions of the aquarium.



28. Write a polynomial that has two positive roots and one negative root.