

Name _____

Chapter 7 Review (7-1 to 7-4)

1. Evaluate $x^4 - 11x^2 + 24$ when $x = -1$. [A] 14 [B] 36 [C] 6 [D] 42

[1] _____

2. Simplify $8x^2 + x - 6 + 3x^2 - 6x - 9$.

[A] $11x^2 + 7x - 15$ [B] $5x^2 + 7x + 3$ [C] $11x^2 - 5x - 15$ [D] $5x^2 - 5x + 3$

[2] _____

Classify the polynomial by degree and number of terms. Describe the shape of its graph.

3. $-x^5 + 3x^3 - x$

[A] quartic trinomial; 'W' shaped with 4 turns
[B] quintic trinomial; 'W' shaped with 4 turns
[C] quintic trinomial; 'W' shaped with 3 turns
[D] quartic trinomial; 'W' shaped with 3 turns

[3] _____

Classify the polynomial by degree and number of terms. Describe the shape of its graph.

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

- [A] quartic binomial; 'S' shaped with 2 turns
- [B] cubic quadrinomial; 'S' shaped with 2 turns
- [C] cubic quadrinomial; 'W' shaped with 3 turns
- [D] quartic binomial; 'W' shaped with 3 turns

[4] _____

5. Determine the end behavior of the graph of the function $f(x) = -3x^4 - x^3 + 2x$.

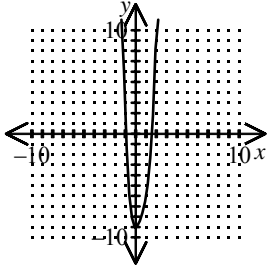
- [A] rises to the left; falls to the right
- [B] falls to the left; rises to the right
- [C] rises to the left; rises to the right
- [D] falls to the left; falls to the right

[5] _____

6. Graph the function and approximate any local maxima or minima to the nearest tenth. Specify the intervals in which the function is increasing or decreasing.

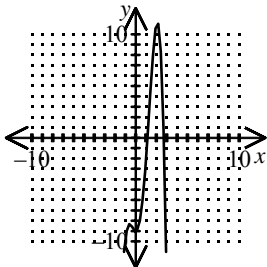
$$P(x) = -2x^4 - 4x^3 + 5x^2 - 9$$

[A]



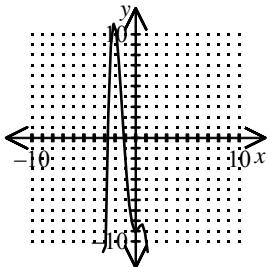
no max
 min: ≈ -9.0
 increasing: $x > 0$
 decreasing: $x < 0$

[B]



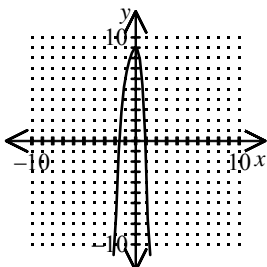
max: ≈ 11.2 and ≈ -8.3
 min: ≈ -9.0
 increasing: $x < -0.6$, and $0 < x < 2.1$
 decreasing: $-0.6 < x < 0$, and $x > 2.1$

[C]



max: ≈ 11.2 and ≈ -8.3
 min: ≈ -9.0
 increasing: $0 < x < 0.6$, and $x < -2.1$
 decreasing: $x > 0.6$, and $-2.1 < x < 0$

[D]



max: ≈ 9.0
 no min
 increasing: $x < 0$
 decreasing: $x > 0$

Write the product as a polynomial in standard form.

7. $(x-4)(x+5)(x+2)$ [7] _____

[A] $x^3 + 3x^2 + 10x - 20$

[B] $x^3 - 40$

[C] $x^3 + 7x^2 - 18x + 10$

[D] $x^3 + 3x^2 - 18x - 40$

8. $(x-5)^2(x+4)$

[A] $x^3 + 100$

[B] $x^3 - 6x^2 - 40x + 25$

[C] $x^3 - 6x^2 - 15x + 100$

[D] $x^3 + 100x^2 + 25x + 25$

[8] _____

Use factoring to solve for each.

9. $x^3 + 4x^2 - 32x = 0$ [A] 0, 8, 4 [B] 0, -8, -4 [C] 0, -8, 4 [D] 0, 8, -4

[9] _____

10. $x^3 + 4x^2 + x - 6 = 0$ [A] 4, -2, 1 [B] -3, -2, 1 [C] 3, -2, 1 [D] -4, -2, 1

[10] _____