Algebra II A **NAME** _____

CHAPTER 6 PRACTICE TEST

Simplify the following:

1. $5^{16} \cdot 5^{-2}$?

_____

2. $x^{-8} \cdot x^{8}$?

_____

3. $\frac{12a^{7}}{4a^{3}}$?

_____

4. $\left(x^{5}\right)^{8}$?

_____

5. x^{-6} ?

_____

6. Simplify: $\left(2a^{4}\right)\left(-6a^{3}\right)$

_____

7. Simplify: $\left(2p^{3}a\right)^{4}$

_____

8. Simplify: $\left(3x^{2}y^{3}\right)^{3}$

_____

9. Factor: $\left(x^2-12x+20\right)$

_____

10. Factor: $\left(2x^2+5x-3\right)$ …**box method!**

_____

11. Factor: $\left(x^2-25\right)$

_____

12. Factor: $\left(x^3-3x^2+6x-18\right)$ …**Grouping!**

_____

13. Factor: $\left(x^3-8\right)$ …**Diff. of Cubes!**

.

_____

14. What is the degree of the polynomial $h(x)=-3x^3-8x^2+5$?

_____

15. What type of polynomial is $h(x)=-3x^3-8x^2+5$?

_____

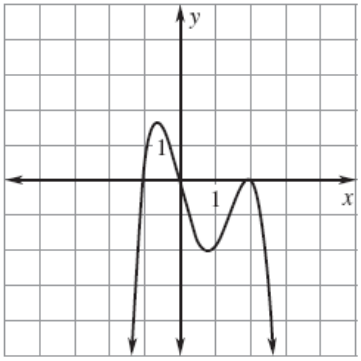
A. Quartic **B.** Linear **C.** Quadratic **D.** Cubic

16. Name the type of turning points and there location**.**

Type_____**Location**_____

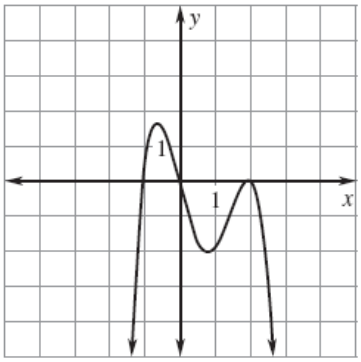
Type_____**Location**_____

Type_____**Location**_____

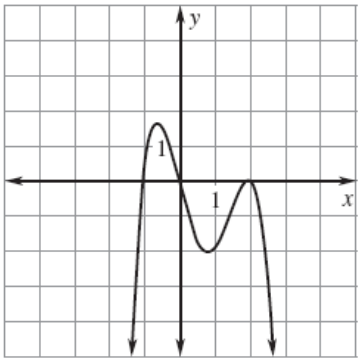


17.

List the Roots_____



18. Describe the end behavior:



Right Side Behavior

$\text{As } x \to \infty, \quad y \to$ _____

Left Side Behavior

$\text{As } x \to -\infty, \quad y \to$ _____

19. Subtract the polynomials.

$$2\left(x^3-3x+1\right)-3\left(2x^2+4x-6\right)$$

20. Multiply the polynomials.

$$\left(3x+2\right)\left(4x-7\right)$$

21. Multiply the polynomials.

$$\left(x-5\right)\left(2x^2-x+4\right)$$

22. Divide the polynomials by long division.

$$(x^2+3x-10)\div(x-2)$$

23. Divide the polynomials by Synthetic division.

$$(2x^2+9x+10)\div(x+4)$$

24. Solve the following by Factoring:

$$x^4-10x^2+16=0$$