Alg 2 6.1-6.4 Test Review Name_____Hr__

Graphing Calculator Section

1. The polynomial $1600x^3 + 1200x^2 + 800x$ represents your savings, with interest, from a job after 3 years. The annual interest rate equals x – 1. Find the interest rate needed so that you will have $4000 at the end of the three years.

2. Divide using long division. Write answer in fraction form.

$$\frac{3x^3 - x^2 - 7x + 6}{x + 2}$$

3. Which of the following are factors of $p(x) = x^3 + 3x^2 - 10x - 24$

a) (x – 3) b) (x + 6)

4. Write the polynomial in standard form $(4x^3 - 2x^4 + 2x) - (2x^3 - 2x^4 - 5x + 1)$

a) Name polynomial based on degree.
b) Determine leading coefficient.
c) What does the degree and leading coefficient tell you about this polynomial?

5. Verify and Prove the following identity algebraically.

$$(a-b)^3 = a^3 - b^3 - 3a^2b + 3ab^2$$

6. Solve the following equations.

a) $f(x) = 8x^3 - 1$ b) $p(x) = x^4 + 2x^2 - 15$

Non-Graphing Calculator Section

7. Given the polynomial, find the zeros, state any multiplicities, and sketch graph.

a) $y = (x-2)^2(x+3)$ b) $y = (x+1)(x-3)^3$

8. Factor, find x intercepts (zeros) and then sketch graph.

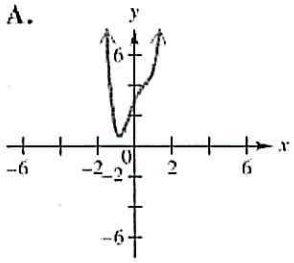
a) $y = x^3 - 6x^2 + 9x$ b) $y = x^4 - x^3 - 6x^2$

9. Based on the end behavior, match each function with it's graph. Explain.

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

$h(x) = 4x^4 + 2x^3 - x$ $k(x) = 5x^3 - 2x + 1$

A.



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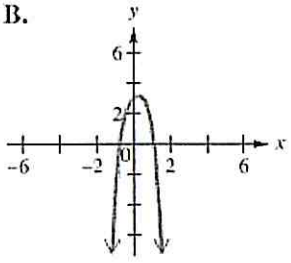

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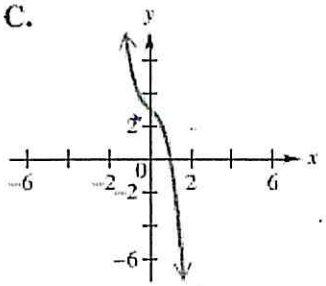
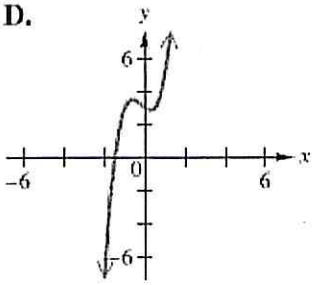
D.