Alg 2 6.1-6.3 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 is x – 1. Find the interest rate needed so that you will have $4000 at the end of the three years.

Non-Graphing Calculator Section

2. Divide using long division. Write answer in fraction form & polynomial 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) Classify the polynomial based on degree.
b) Determine lead coefficient.
c) What does the degree and lead coefficient tell you about this polynomial?

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

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

6. Factor to find the zeros, then sketch the graph.

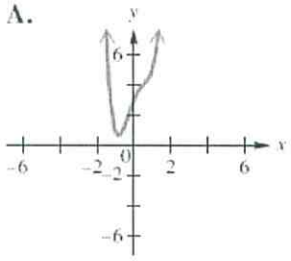
a) $y = x^3 - 6x^2 + 9x$ b) $y = x^4 - x^3 - 6x^2$

7. Based on the end behavior, match each function with its graph. Explain your reasoning.

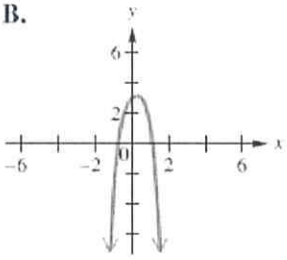
$f(x) = -3x^4 + 2x^3 - 5x + 2$ $g(x) = -9x^3 + 4x^2 - 3$

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

A.



B.



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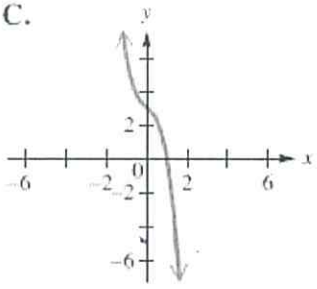

D.