Alg 2 Final Exam Review Fall 2018

Chapter 6 1. Find ALL Complex solutions, real and imaginary, using factoring.

a) $2x^5 - 10x^3 - 72x = 0$ b) $3x^3 - 2x^2 + 18x - 12 = 0$ c) $5x^6 - 80x^2 = 0$

2. State the Degree(actual NUMBER) and Leading Coefficient (actual NUMBER) of each polynomial.

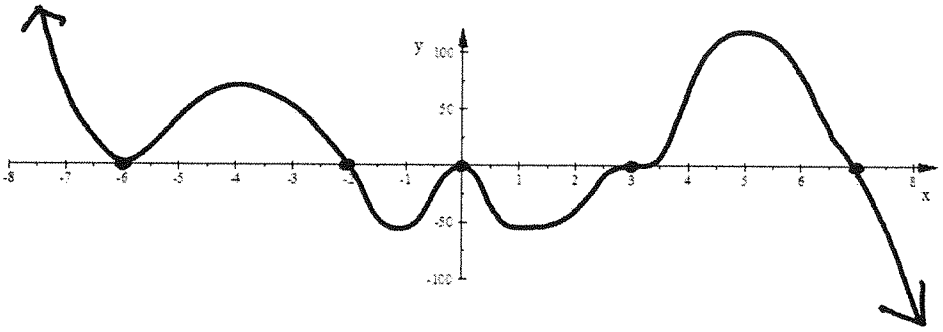
a) $5x^3 - 3x^2 + x^5 - 9x + 12$ b) $-10x^2(5x + 6)^2(2x - 1)^3(x + 3)$

3. State the end behavior of each polynomial.

a) $y = 5x^4 + 6x^3 - 7x + 1$ b) $y = -x(x + 6)^2(x - 7)^2(x + 4)$

c) $y = -2x^5 + 8x^4 - 9x^2 + 10x$ d) $y = x^3(x + 3)^2(x + 7)(x - 1)$

4. Write the equation of the polynomial shown in the graph.



5. Find each quotient. You can leave remainders any way you wish.

a) $\dfrac{3x^4 - 8x^3 + 7x^2 + 4x - 9}{x - 2}$ b) $\dfrac{8x^3 + 22x^2 - 25x + 3}{4x - 3}$

6. Use this polynomial: $y = x^4 + x^3 - 6x^2 + 6x - 72$ Given 3 and –4 are zeros of $f(x)$ use division to help find the remaining Complex roots.

7. Graph the following polynomial to find ALL real zeros and the coordinates of ALL Extrema. Round to the nearest hundredth.

$y = 0.01x^4 - 0.03x^3 - 0.41x^2 + 0.03x - 1.6$

8. Is $x - 2$ a factor of $f(x) = 2x^3 + 3x^2 - 18x + 8$? Give a reason for your answer.