Chaparral High School
Algebra II Review for Exam Chapter 5 Polynomials

This is a 50 minute exam to be completed without the aid of calculators. Please show all appropriate work and place answers in lowest terms. Please work independently. This exam will be scaled to 100 points. Good Luck!

1) **Section 5.1** (4 points) Simplify and write the answer in standard form. Then classify the resulting polynomial by degree and by the number of terms.

$$5\left(x^2-3\right)+2x-4\left(x-x^2\right)+7\left(x-1\right)\left(x+2\right)$$

2) **Section 5.2** (6 points) Graph the function given below. Give only the portion of the graph around each x-intercept. Be clear as to whether the graph "bounces" off the x-axis, goes straight through the x-axis, or "wiggles" through the x-axis. Be sure to consider the end-behavior of the graph.

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

3) **Section 5.3** (6 points) Find *all* solutions to the polynomial equation given below.

$$16x^3=54$$

4) **Section 5.3** (6 points) Find *all* solutions to the polynomial equation given below.

$$3x^4+12x^2-15=0$$

5) **Section 5.4** (6 points) Divide the polynomials using *Long Division.*

$$\left(3x^5-7x^4-3x^2-8x-2\right)\div\left(x^2-3\right)$$

6) **Section 5.4** (5 points) Divide the polynomials using *Synthetic Division.*

$$\left(3x^3-12x^2-4x+7\right)\div\left(x-2\right)$$

7) **Section 5.5/5.6** (6 points) Find *all* solutions to the polynomial equation given below.

$$12x^3-32x^2+25x=6$$

8) **Section 5.5/5.6** (6 points) Find *all* solutions to the polynomial equation given below.

$$9x^4+3x^3-30x^2+6x+12=0$$