

Chaparral High School
Algebra II Review for Exam Chapter 4

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) (5 points) **Section 4.1** Graph the function using translations. Find the vertex, the extreme value (Maximum or Minimum), and the Axis of Symmetry. Give the Domain and Range of the function.

$$y = -3(x + 7)^2 - 8$$

- 2) (5 points) **Section 4.2** Find the vertex of the quadratic given below.

$$y = 2x^2 - 5x + 12$$

- 3) (7 points) **Section 4.2** Use "Completing the Square" to place the function below into vertex form $y = a(x - h)^2 + k$ and graph the function.

$$y = 3x^2 - 12x + 10$$

- 4) (5 points) **Section 4.4** Factor the expressions given below. Remember to factor completely

- a) $2x^3 - 4x^2 - 8x$
- b) $x^2 - 13x + 36$
- c) $2x^2 - 19x + 24$
- d) $12y^2 - 75$

- 5) (5 points) **Section 4.5** Solve the equation given below by *factoring*.

$$2x^2 + 8x = 5x + 20$$

- 6) (6 points) **Section 4.6** Solve the equation given below by "*completing the square*".

$$3x^2 - 12x + 7 = 0$$

- 7) (5 points) **Section 4.7** Solve the equation given below by using the *Quadratic Formula*.

$$5x^2 + 8x - 10 = 1$$

- 8) (6 points) **Section 4.8** Complete the operations given below and graph your result to part a)

- a) $(2 - 4i) + (-3 + 5i)$
- b) $(3 - 9i) - (2 - 8i)$
- c) $(3 - 2i)(2 - 5i)$
- d) $\frac{1-i}{5-6i}$
- e) $|2 - 5i|$

- 9) (6 points) **Section 4.9** Solve the system of equations given below.

$$\begin{aligned}y &= 2x^2 + 2x + 1 \\y &= 3x + 4\end{aligned}$$