Regular Advanced Algebra w/ Trig Semester 1 Final Review Name: _____
Chapter 4 (Quadratic Functions), Glawe Period: _____

1) What is the equation for the axis of symmetry of a quadratic function (in all forms)? What else can you find using the axis of symmetry? (4.1)

Factor the following expressions: (4.3/4.4)

2) $w^2 - 8w + 12$

3) $x^2 - 16$

4) $x^2 + 3x - 28$

5) $3z^3 - 15z^2 + 36z$

6) $18x^2 - 32$

7) $3w^2 - 11w - 4$

Solve the following equations by *factoring*. (4.3/4.4)

8) $9x^2 - 3x = 0$

9) $7w^2 + 28w = 0$

10) $144 = 25x^2$

11) $25 = x^2 - 8x + 16$

12) $12x^2 + 5x + 5 = 7$

Solve the following equations by *using square roots*. (4.5)

13) $4x^2 + 100 = 0$

14) $25 = 7b^2 - 10$

Write the following expressions as a complex number in standard form. (4.6)

15) $(2-5i)+(-1-3i)$

16) $(2-5i)-(-1-3i)$

17) $\frac{2-3i}{4+i}$

18) If $(ax+2)(3x-5b)-bx^2=-11x^2+36x-20$, what is the value of $a+b$? (4.3/4.4)

19) Write a quadratic function in vertex form with the vertex (-1, -4) and passes through the point (2, -1). How has this graph shifted from the original quadratic parent function? (4.10)

Simplify the following expressions. (4.5)

20) $\sqrt{10}\cdot\sqrt{15}$

21) $\frac{2}{6-\sqrt{8}}$

22) $\sqrt{\frac{5}{2}}$

Solve the using the quadratic formula. (4.8)

23) $y=x^2+6x+4$

24) $y=2x^2-16x+50$

Solve the inequality algebraically, write the solution in **interval notation**. (4.9)

25) $x^2+2x-3>0$

26) $x^2-3x\leq 10$