GSE Algebra 1 **HW #8.10** Name: \_\_\_\_\_\_\_\_\_\_\_\_

**Quadratic formula:** $x=\frac{-b\pm \sqrt{b^{2}-4ac}}{2a}$

Complete the square to solve for x. (do the entire problem)

1. $x^{2}-6x+10=0$ 2) $2x^{2}+8x=-3$

Complete the square to put in vertex form. $y=a(x-h)^{2}+k$

Tell what the **vertex** and whether it is a **min** or a **max**.

1. $y=x^{2}+4x-10$ 4) $y=-x^{2}-10x+3$
2. You throw a water balloon into the air so that its height h, in meters, after t seconds is $h=-4.9t^{2}+27t+2.4$.
	1. How high is the balloon after 1 second?
	2. For how long is the balloon above 30 meters high?
	3. What is the maximum height of the balloon?
	4. When will the balloon burst and hit the ground?
3. The product of two consecutive even integers is 48. What are the two numbers?
4. The product of two consecutive positive odd integers is 255. What are the two numbers?
5. The width of a rectangle is 5 meters less than its length. The area is 84 square meters. What are the dimensions for the rectangle?

Solve the following with the quadratic formula.

1. $4x^{2}-6x+3=0$ 10) $25x^{2}-4=0$