**Secondary Math 2 7.3 Homework Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_**

**Solving Quadratics by Competing the Square**

**Solve each quadratic equation by completing the square.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | $a^{2}-18a+24=0$   |  | $$x^{2}+18x+73=-9$$ |

**Solve each quadratic using any method.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | $$3\left(x-4\right)^{2}=15$$ |  | $$x^{2}-36=0$$ |
|  | $p^{2}=-2p+8$   |  | $$2x^{2}+8=17x$$ |

**Extended Understanding:**

1. The following can be solved by completing the square, solve it (hint $\left(\frac{9}{2}\right)^{2}=\frac{81}{4}$

$$x^{2}+9x+\frac{17}{4}=0$$

1. After getting an A on the test for this unit, that funny but slightly eccentric student sitting next to you gets overly excited, stands up, and throws their hat in the air from all of their joy. The height of the hat in the air over t seconds is modeled by the function $y=-16t^{2}+16t+4$.

After how many seconds will the hat hit the ground? (Use completing the square to solve.)