NC Math 1B Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 4 Lesson 4 Homework: Comparing Quadratics**

***Answer the following questions using the given equation, table, and/or graph.***

Sally and Sam are testing out their new potato shooters from their tree houses which are at different heights. The chart to the right shows the time, *t*, in seconds and height, *h*, in meters of the potato pieces shot from Sam’s shooter. The time, *t*, and height, *h(t)*, of Sally’s potato shooter can be represented by the following equation: $h(t)=-t^{2}+4t+5$.

|  |
| --- |
| **Sam’s Shooter** |
| ***t*** | ***h*** |
| 0 | 7 |
| 0.5 | 9 |
| 1 | 10 |
| 1.5 | 10 |
| 2 | 9 |
| 2.5 | 7 |
| 3 | 4 |
| 3.5 | 0 |

**1. Whose potato pieces hit the ground first? Sally or Sam’s?**

**2. What is the difference in seconds between when Sally and Sam’s potatoes hit the ground?**

.

Two small children, Michael and Victoria, are trying to see who can throw a rock higher in the air. The graph on the right shows the path of Michael’s rock. The table on the right shows the time, *t,* in seconds and height, *h*, in feet of Victoria’s rock.

|  |
| --- |
| **Victoria’s Rock** |
| ***t*** | ***h*** |
| 0 | 4 |
| 0.5 | 7 |
| 1 | 9 |
| 1.5 | 7 |
| 2 | 4 |
| 2.5 | 0 |

**Michael’s Rock**

**3. What was the initial height of Michael’s rock?**

 **….Victoria’s rock?**

**4. Whose rock went the highest? Michael’s or Victoria’s?**

**5. Did their rock actually travel farther in the air? Why/why not?**