**Homework: pg 160 # 1, 4, 6, 10, 11, 12, 13ac**

**The Inverse of a Quadratic Function**

**Activity**

Graph the function and its inverse on the grid below.



**y**

**x**

From the above graphs, we see that the inverse of can be determined by reflecting the entire graph about the \_\_\_\_\_\_\_\_\_ line.

We also note that the inverse of is not a function since it would fail the \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_.

**Example 1**

For each function below, determine the domain and range. Then, determine the inverse of the function state its domain and range. Compare.

1. b)

Domain: Domain:

Range: Range:

Inverse Inverse

**Example 2**

The profit of a company can be modeled using the following equation:

where

* P(x) is the total profit (in $)
* x is the amount of money invested in advertising (in $)

1. Determine the inverse for this function. ie; isolate the equation for the variable x.

\*\*\*Note: that when finding the inverse of an equation that represents a real world application, we do not swap variables.\*\*\*

1. How much should be spent on advertising to earn $5,000,000 in profit?