2-7 Skills Practice
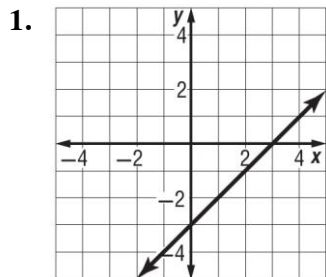## *Parent Functions and Transformation*

Identify the type of function represented by each graph.
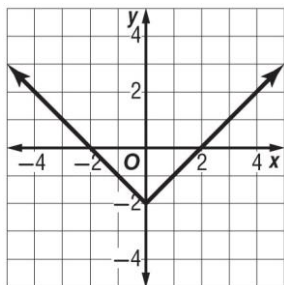
1.

linear

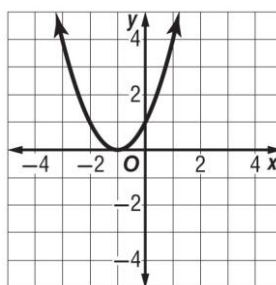**2.**
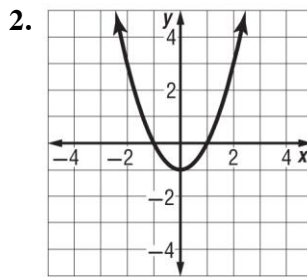
quadratic

Describe the translation in each equation. Then graph the function.

3. $y = |x| - 2$

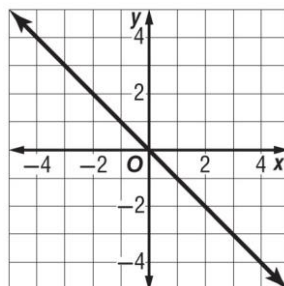**translated down 2 units**

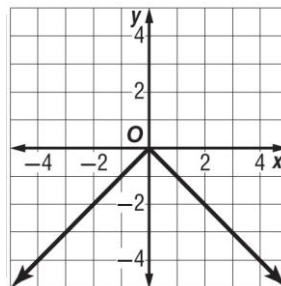**4.** $y = (x + 1)^2$

translated left 1 unit

Describe the reflection in each equation. Then graph the function.

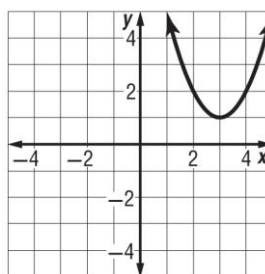**5.** $y = -x$

reflected in the *x*-axis

6. $y = -|x|$

reflected in the *x*-axis

7. Biology A biologist plotted the data from his latest experiment and found that the graph of his data looked like this graph. What type of function relates the variables in the experiment?

**quadratic**

2-7 Word Problem Practice
Parent Functions and Transformations

1. GAMES Pedro decided to measure how close to a target he and his friends could throw a football. They counted 1 point for each foot away from the target that the football landed. The graph of points versus distance thrown is shown here. What type of function had Pedro and his friends followed?
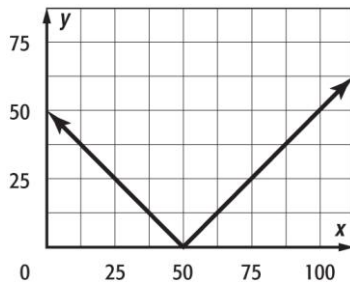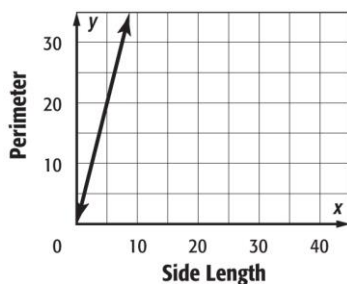

absolute value

2. ASTRONOMY The graph shows the velocity of the space probe Cassini as it passed Saturn. What type of function best models Cassini's velocity?
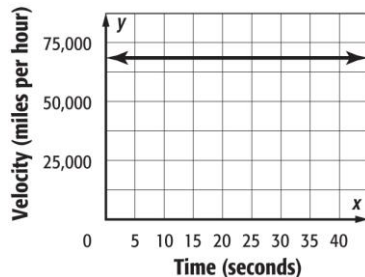

constant

3. GEOMETRY Chen made this graph to show how the perimeter of a square changes as the length of one side is increased. The original graph showed an identity function. How has it been dilated?


It has been stretched vertically by a factor of 4.

4. BUSINESS Maria earns an hourly wage of $10. She drew the following graph to show the relation of her income as a function of the hours she works. How did she modify the identity function to create her graph?
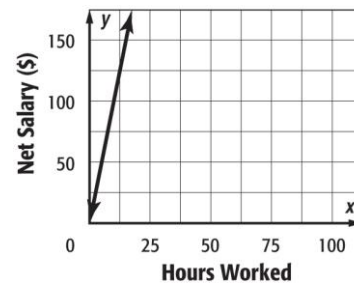
She stretched it vertically by a factor of 10.

5. HOBBIES Laura launched a model rocket into the air. The height of her rocket over time is shown by the graph.
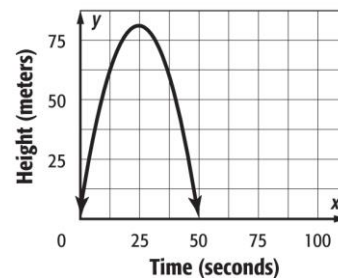
a. What type of function does the graph show?
   quadratic

b. In which axis has the function been reflected?
   ***x*-axis**

c. Which directions has the graph been translated? How many units?
   right about 25 units and up about 80 units

d. What is the equation for the curve shown on the graph?
   Sample answer: $y = -(x - 25)^2 + 80$