Name: _____   Date: _____

Practice: Model Quadratic Relations

1. Is each relation linear or quadratic? How do you know?

a) $y = x^2 + 4$ **b)** $y = 3x^2 - 1$
c) $y = x + 2$ **d)** $y = 2$
e) $y = -4x^2$ **f)** $y = -3x$

2. a) Determine if each relation is linear or quadratic.

a)

x	y
−4	8
−3	6
−2	4
−1	2
0	0
1	−2
2	−4

b)

| x	y
−4	−16
−3	−9
−2	−4
−1	−1
0	0

3. Jimmy is training for the school baseball team. The table shows the heights and horizontal distances of a baseball after Jimmy hits it.

Horizontal Distance (m)	Height (m)
0	0
5	4.5
10	9.5
15	13.5
20	16.5
25	18.5
30	16.5
35	13.5

a) Draw a scatter plot of the data.
b) Find the equation of the curve of best fit.

c) Describe the relationship between the horizontal distance the ball travels and the height of the ball.

4. Kallie is training for the school high-jump team. She asked her friend to record her vertical height from the moment she leaps up from the ground to the moment she lands on the other side of the pole.
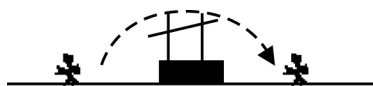
The table shows the time and vertical height during her jump.

Time (s)	Height (m)
0	0
0.2	0.2
0.4	0.6
0.6	1.2
0.8	2.0
1.0	3.0
1.2	2.0
1.4	1.2

a) Draw a scatter plot of the data.
b) Find the equation of the curve of best fit.
c) Describe the relationship between the time and the vertical height while Kallie is in the air.

5. For each relation, make a table of values and graph the relation.

a) $y = x^2 - 12$ **b)** $y = x^2 + x - 1$
c) $y = -3x^2$ **d)** $y = 2x^2 + x - 3$