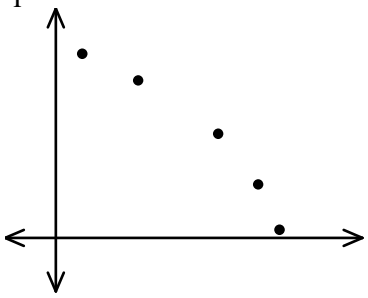
NAME:_____

1. Data from an experiment is graphed below. Tell whether the data is best modeled by a linear or a quadratic model.



2. Which equation is the best model for this data?

x	1	2	3	4	5
y	-2.2	-2.8	-5.8	-11.2	-19

[A] $y = x^2 - 3.2$ [B] $y = -4.2x + 4.4$ [C] $y = -1.2x^2 + 3x - 4$ [D] $y = -1.8x + 0.8$

3. Use a graphing calculator to find a quadratic and a linear model for this data. Which model is better? Explain.

x	1	3	5	10
y	-1	15	57	197

4. The data in the table shows the temperature on a porch during several hours of the day. Tell whether the data is best modeled by a linear or a quadratic model.

Time	6 am	7 am	11 am	1 pm	4 pm	7 pm	9 pm
Temp.	45°	50°	52°	68°	70°	56°	49°

5. This table shows the amount of time it took a student to do the same puzzle over and over again.

Number of Trials	1	2	3	4	5
Time in Minutes	45	32	25	21	19

How long do you think it would take this student to do the same puzzle if he or she tries it a sixth time? Explain your answer.

[1] quadratic

[2] C

[3] Linear model, $y = 22.93x - 41.91$. Quadratic model: $y = 1.6x^2 + 4.5x - 8.8$. Quadratic model is better because it matches the four data points better.

[4] quadratic

[5] about 17-18 minutes; while time is improving, the amount of improvement is slowing down.