

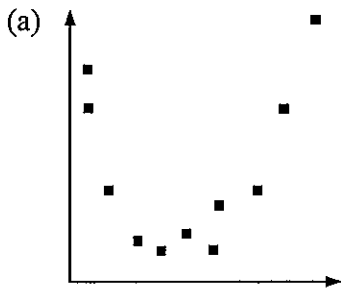
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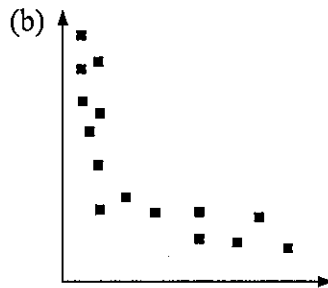
**OTHER TYPES OF REGRESSION**  
**COMMON CORE ALGEBRA I HOMEWORK**

**FLUENCY**

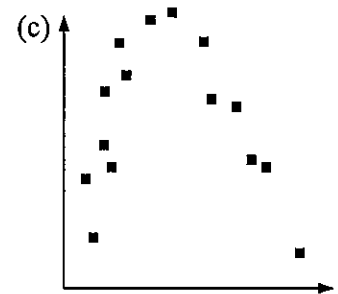
1. For each scatterplot below, determine the best type of regression from: linear, exponential, or quadratic. Draw a representative curve (line, exponential, or parabola) through the data.



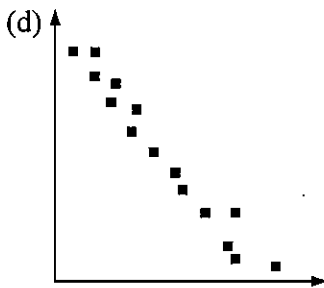
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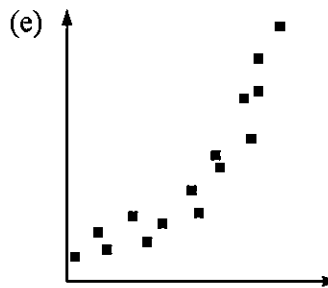
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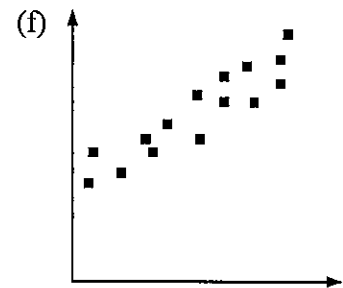
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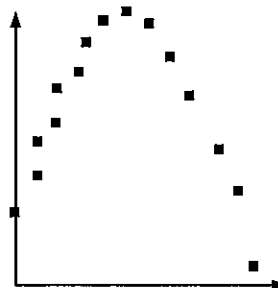
2. Given the scatterplot below, which of the following equations would best model the data? Explain your choice.

(1)  $y = -3x + 6$

(3)  $y = -4x^2 + 20x + 3$

(2)  $y = 6(2)^x$

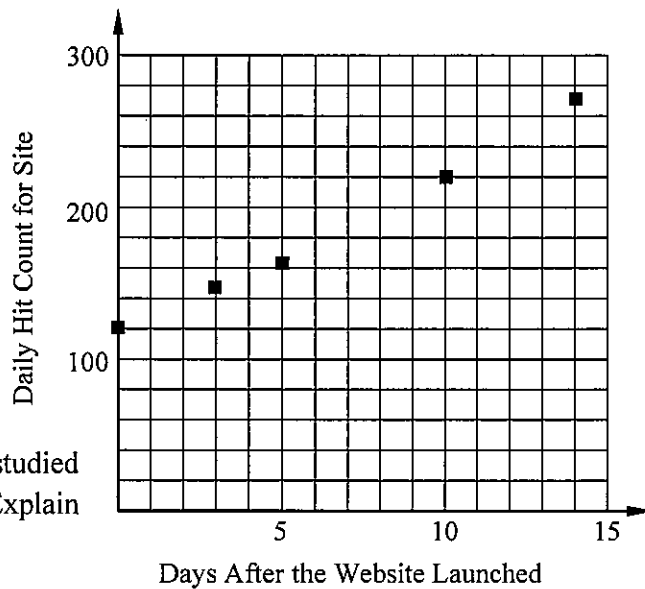
(4)  $y = 2x^2 - 6x + 4$



## APPLICATIONS

3. A marketing company is keeping track of the number of hits that a website receives on a daily basis. Their data for the first two weeks is shown below. A scatterplot of the data is also shown.

Days	Hits
0	120
3	145
5	162
10	220
14	270



- (a) Of the three types of regression we have studied which seems least likely to fit this data? Explain your choice.
- (b) Find a linear equation, in the form  $y = ax + b$ , that best models this data and an exponential equation, in the form  $y = a(b)^x$  that best models this data. Round all parameters to the nearest *hundredth*.

### Linear Model

### Exponential Model

- (c) How close are the two model's outputs when  $x = 10$ ? Show the values you find.
- (d) How close are the two model's outputs when  $x = 30$ ? Show the values that you find.
- (e) Which model will predict faster growth of website hits over time? Explain your answer. You may want to experiment by graphing both models.

