

Chapter 8 Practice test

1. Given the regression equation: $\hat{y} = 3x - 1$, finish the table below.

x	y	\hat{y}	$y - \hat{y}$	$(y - \hat{y})^2$
1	7			
2	5			
3	12			
4	3			
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Dog's Weight Problem (2-5): As dogs of a particular breed grow, their weight is a function of their length. Suppose that these lengths and weights have been measured.

x (in.)	y (lb)
6	2
12	14
24	98
29	170
34	260
37	330

- What pattern do the first three data points follow? What type of function has this pattern?
- Find the particular equation for the function in Problem 2 algebraically by substituting the second and third points into the general equation. Show that the equation gives values for the last point close to the value in the table.
- Use the appropriate kind of regression to find the function of the type in Problem 2 that best fits all six data points. Write the correlation coefficient, and explain how it indicates that the function fits the data quite well.
- Use the regression equation from Problem 4 to predict the weight of a newborn puppy 4 inches long. Which do you use, interpolation or extrapolation, to find this? How can you decide?