

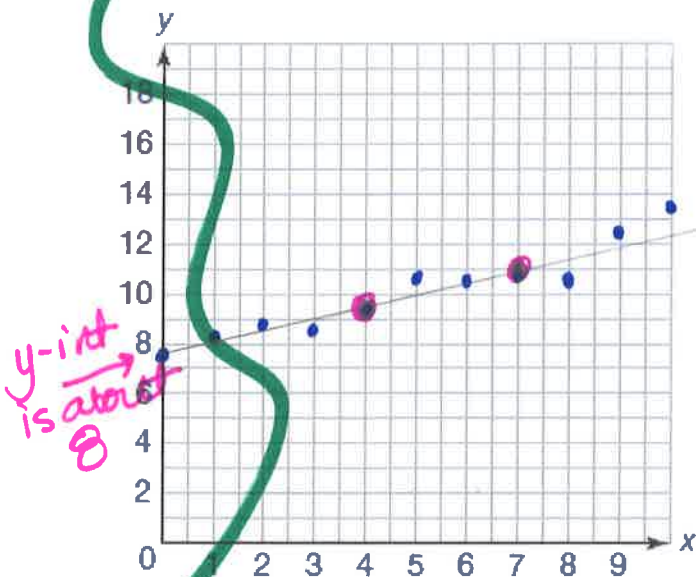
# Study Guide 4

Name Key

4. The table shows the percent of the United States population who did not receive needed dental care services due to cost

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Year	0	1	2	3	4	5	6	7	8	9	10
Percent	7.9	8.1	8.7	8.6	9.2	10.7	10.7	10.8	10.5	12.6	13.3

a. Sketch a scatter plot of the data



b. Using two point from the data <sup>draw and</sup> estimate the equation of the line of best fit.

I used the 2 pink points to get the equation

$$(7, 10.8) \quad (4, 9.2)$$

$$m = \frac{10.8 - 9.2}{7 - 4} = \frac{1.6}{3} = .5\bar{3}$$

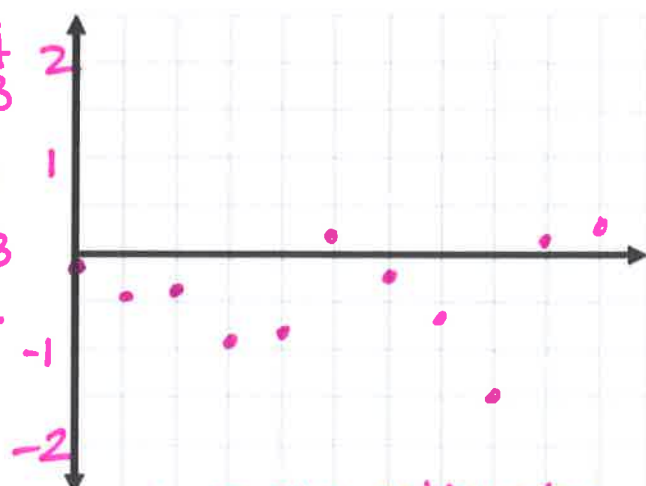
$$y = .5x + 8$$

Your equation may be slightly different & still be close!

I am going to round to .5

c. Using the estimated line of best fit equation, calculate the residuals for the set of data (round to one decimal place). Construct a residual plot for the data.

	Actual	Predicted	Difference
0	7.9	8	-0.1
1	8.1	8.5	-0.4
2	8.7	9	-0.3
3	8.6	9.5	-0.9
4	9.2	10	-0.8
5	10.7	10.5	0.2
6	10.7	11	-0.3
7	10.8	11.5	-0.7
8	10.5	12	-1.5
9	12.6	12.5	.1
10	13.3	13	.3



Because the line of best fit is an estimate, there are more points below than above x-axis. However, the points are still very random, so this is a good linear fit.