Name **Key**   Date _____
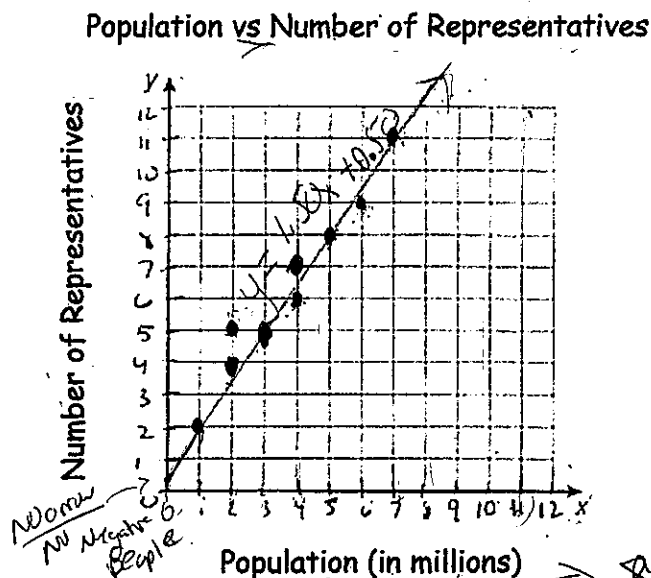
#9c

Homework

This table shows the relationship between the approximate population of ten states and the number of representatives the state has in the House of Representatives.

X   Y

State Population and Representatives	
Population (millions)	Number of Representatives
4	7
2	4
3	5
1	2
2	5
5	8
4	7
7	11
6	9
4	6

Part A: Make a scatter plot for the data on the coordinate plane below.

Population vs Number of Representatives

Number of Representatives

No zero, No Negative people

Population (in millions)

R Use lowest + highest x-values

Part B: Find the equation for the line of best fit. (Round to the nearest hundredth)

$y = mx + b$
$m = 1.50$
$b = 0.50$

$\boxed{y = 1.50x + 0.50}$

begin (start here)

$(1,2)\ (7,11)$
$x_1\ y_1\quad x_2\ y_2$

$m = \dfrac{y_2 - y_1}{x_2 - x_1}$

$m = \dfrac{11 - 2}{7 - 1}$

$m = \dfrac{9}{6}\quad m = 1.50$

$(1,2)\quad m = 1.50$
xy

$y = mx + b$
$2 = (1.50)(1) + b$
$2 = 1.5 + b$
$\underline{-1.5 \quad -1.5}$
$.50 = b$

Part C: Draw your line of best fit.

Part D: Use your equation to find the number of representatives for a state that has a population of 11 million.

x = 11

$y = 1.50x + 0.50$
$y = 1.50(11) + 0.50$
$y = 16.5 + 0.50$
$y = 17$

$\boxed{17 \text{ representatives.}}$

Part E: When you found the number of representatives for a state that has a population of 11 million in part D, were you interpolating or extrapolating?

extrapolating (outside the plotted values)