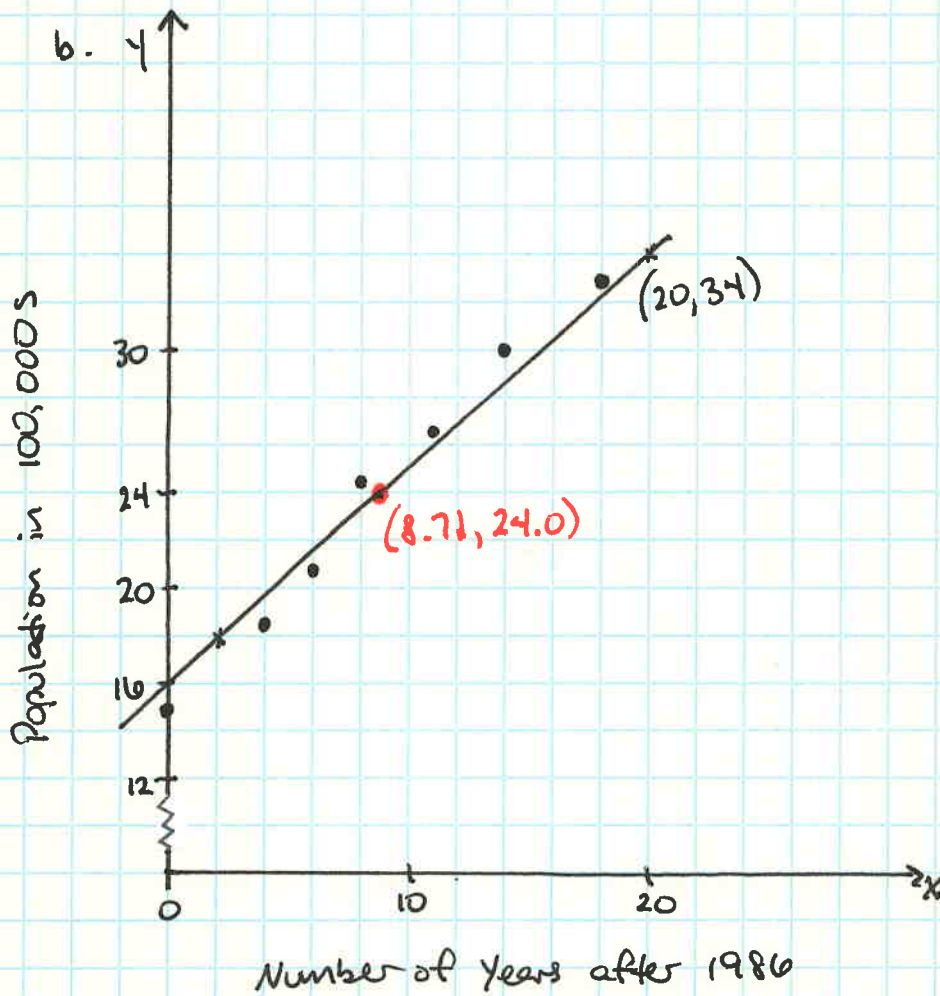


21C Line of Best Fit - Manually

X:	0	4	6	8	11	14	18
Year	1986	1990	1992	1994	1997	2000	2004
Y: Population (100,000s)	15	18.2	20.8	24.5	26.7	30	33

a. $x = \#$ of years after 1986

$y =$ population in 100,000s



c. Mean Point: (\bar{x}, \bar{y}) 3 dec. places 3 sig figs
 $(8.714, 24.029)$ $(8.71, 24.0)$

d. $m = \frac{34 - 24}{20 - 8.71} = \frac{10}{11.29} \approx .886$

$$y = 0.886(x - 8.71) + 24.0$$

f. y-int: 16.3

According to the equation, the population in 1986 was 16.3 hundred thousand people.

g. The population increases by 0.886 hundred thousand people per year.

h. 1995 $\rightarrow x = 9$

interpolation
 \rightarrow reliable

$$y = .886(9 - 8.71) + 24$$

$$y \approx 24.2 \text{ hundred thousand people}$$

i. 2010 $\rightarrow x = 24$

extrapolation
 \rightarrow not reliable

$$y = .886(24 - 8.71) + 24$$

$$y \approx 37.5 \text{ hundred thousand people}$$

HW 21C(1,2)