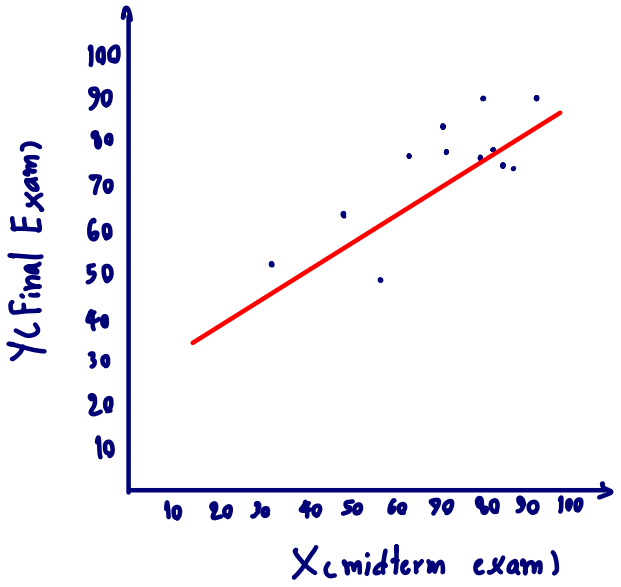
Krittamate Cherdpongtagit 6310545884

a) seem to have linear relationship.



b) $\hat{y} = b_0 + b_1 x$

$n = 12$, $\sum_{i=1}^{12} x_i = 866$, $\sum_{i=1}^{12} y_i = 888$, $\sum_{i=1}^{12} x_i y_i = 66{,}098$, $\sum_{i=1}^{12} x_i^2 = 65942$

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} = \frac{866}{12} = 72.1667, \quad \bar{y} = \frac{\sum_{i=1}^{n} y_i}{n} = \frac{888}{12} = 74$$

$$b_1 = \frac{\sum_{i=1}^{n} x_i y_i - (\sum_{i=1}^{12} x_i \sum_{i=1}^{12} y_i)/n}{\sum x_i^2 - (\sum x_i)^2/n} = \frac{66098 - \frac{866(888)}{12}}{65942 - \frac{(866)^2}{12}} = 0.5816$$

$$b_0 = \bar{y} - b_1\bar{x} = 74 - (0.5816)(72.1667) = 32.0278$$

$$\hat{y} = b_0 + b_1 x = 32.0278 + 0.5816x$$

c) $x = 86$, $\hat{y} = ?$

$$\hat{y} = 32.0278 + 0.5816x = 32.0278 + (0.5816)(86) = 82.0454$$ ※