

4.10 Equation from LoBF

The table below displays data that relate the number of hours studying to the mark received on the exam.

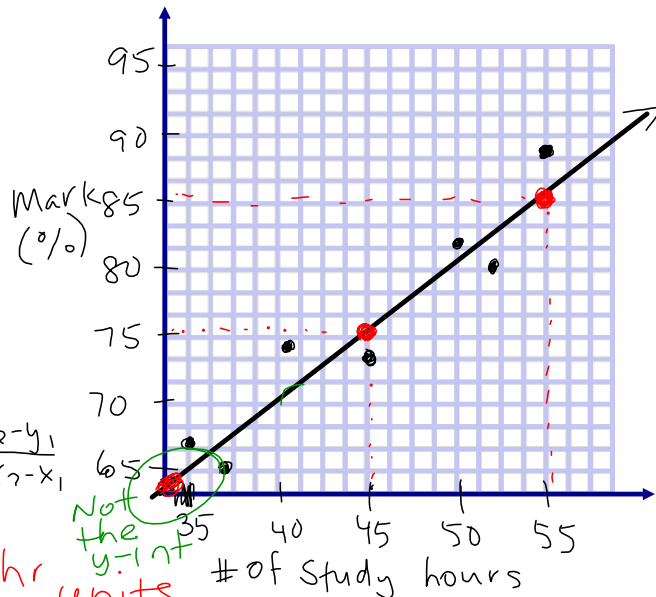
x Ind	# of Study Hours	35	37	41	45	50	52	55
y Dep	Mark (%)	67	65	74	73	82	80	88

TEST
Wednesday
TASK
Thursday

1. Create a scatterplot of the data.
Use breaks in the graph.

2. Draw a line-of-best-fit for the data. Why is this reasonable?

Yes - relationship appears linear



3. a) What is the approximate rate of change for this data set?

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

(with units)

$$= \frac{10}{10} = 1\% / \text{hr}$$

units

b) What is the real-world meaning of the rate of change?

Every hours studying your mark increasing 1%

4. What is the y-intercept for the line that best models the data?

What is the real-world meaning of the y-intercept?

Point (45, 75)
 $m = 1$

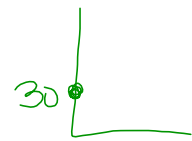
$$y = mx + b$$

$$75 = (1)(45) + b$$

If you study 0 hours, your mark would be 30%.

$$75 - 45 = b$$

$$30 = b$$



5. Use your equation to predict how many hours you need to study in the entire course to get a 95%.

$$y = 1x + 30$$

$$95 = x + 30$$

$$95 - 30 = x$$

$$65 = x$$

$$\rightarrow y = 95$$

∴ you would need to study 65 hours

① Finish back of
orange sheet

② Start Review
→ Yellow Handout