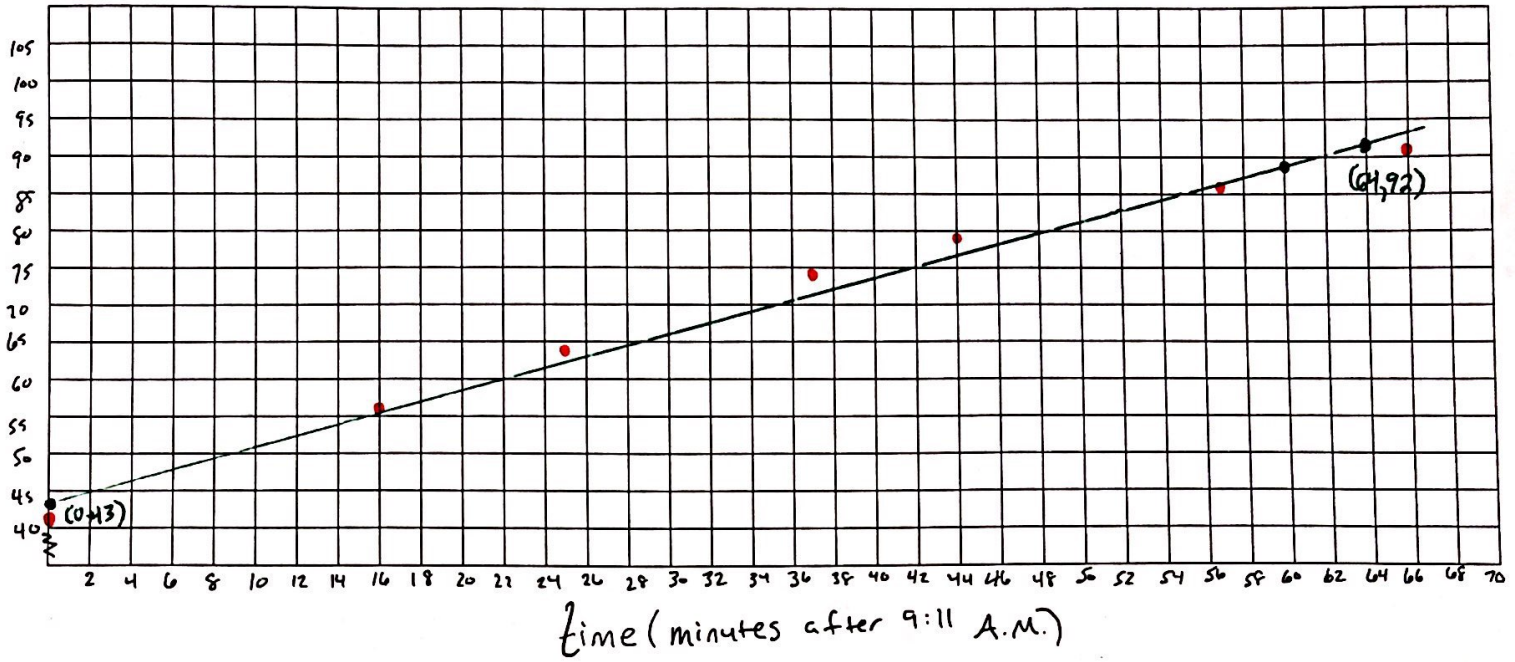
Scatter Plot –Jerry's Laptop Name: KEY



Jerry forgot to plug in his laptop before he went to bed. He wants to take the laptop to his friend's house with a full battery. The pictures to the right show screenshots of the battery charge indicator after he plugs in the computer at 9:11 AM.

Questions:

1) Is the correlation positive or negative? Why do you think this is?

Positive; the more time goes by, the more the laptop charges.

2) What type of correlation is represented by this situation? Estimate the value of the correlation coefficient *r*.

Linear correlation; strong positive (around 0.9 or so)

3) Draw a line of best fit and find the equation for it (Hint: find two points **on your line**).
What does the slope of the equation represent?

(0,43) (64,92) $\frac{92-43}{64-0} = \frac{49}{64} = 0.765625$ $y = 0.765625x + 43$

The laptop charges about 0.77% per minute.

4) Use your **equation** to estimate the time when Jerry will have a fully charged laptop.

$100 = 0.765625x + 43$

$57 = 0.765625x \rightarrow x = 74.449$

About 74.4 minutes ≈ 10:25

5) With your calculator, perform a linear regression. When will Jerry have his laptop fully charged based on the line of best fit?

$y = 0.75653x + 43.6643 \rightarrow 100 = 0.75653x + 43.6643$

$x \approx 74.5$ 10:25 or 10:26