

### FST 2.2-2.3 Worksheet

1) The table shows the relationship between the time a student spends typing each week and his percent improvement on speed assessments.

L1 Practice hours	6	8	10	12	14	16	18
L2 Percent improvement	25	26	29	36	30	35	39

Round answers to the thousandths (3 decimal places)

a) Find the linear model for the relationship between practice hours and percent improvement.

$$y = 1.089x + 18.357$$

b) Use the model from Part a to predict the percent improvement for 20 hours of practice.

$$y = 1.089(20) + 18.357$$

$$y = 40.137\% \text{ Improvement}$$

c) Is your prediction in Part b an interpolation or an extrapolation? Explain.

Extrapolation  $\rightarrow$  OUTSIDE GIVEN DATA (6-18 hrs)

d) Calculate the residual for 8 hours of practice?

$$y = 1.089(8) + 18.357$$

$$y = 27.069$$

$$R = \text{obs} - \text{pred}$$

$$= 26 - 27.069 = -1.069$$

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$$R = 26 - 27.071429$$

$$R = -1.071$$

e) What is the correlation coefficient for the line?

$$r = 0.885$$

STRONG POSITIVE CORRELATION

f) What is the sum of squared residuals for the data?

$$\sum x^2 = 36.821$$