

# RECIPROCAL TRANSFORMATION.

Reciprocal refers to something of the form  $\frac{1}{x}$ ,  $\frac{1}{y}$

Eg The table shows the length (in cm) and width (in cm) of eight sizes of sticky labels.

Length	6.8	5.6	4.6	4.2	3.5	4.0	5.0	5.5
Width	1.8	2.0	2.5	3.0	3.5	2.6	2.0	1.9

Using a  $\frac{1}{y}$  transformation

↳ 2 figures

a) Linearise the data and find the regression line.

b). Predict the width of a sticky label with length 5 cm.

Walk Through on Computer.

Sol<sup>n</sup>

$$a) \quad y = ax + b$$

$$a = 0.08591$$

$$r = 0.9233$$

$$b = 0.01471$$

$$y = \frac{1}{\text{width}}$$

$$\frac{1}{\text{width}} = 0.086 \times \text{Length} + 0.015.$$

$$b) \quad \frac{1}{\text{width}} = 0.086 \times 5 + 0.015$$

Use Solve I on Calc

$$\text{width} = 2.247$$

$$= 2.25 \text{ cm.}$$

Questions: Exercise 5D on Work Plan.

Review Questions on Work Plan.