

ANSC/TPSS 603
Assignment 9 - Regression

The following data are given for the development rate of apple maggot pupae for different rearing temperatures.

X = rearing temperature in Celsius

Y = mean development per day

X	10.0	13.5	19.5	26.0	29.0
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Y	0.10	0.322	1.10	2.15	2.25
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$$\Sigma X = 98, \Sigma X^2 = 2179.5$$

$$\Sigma Y = 5.92, \Sigma Y^2 = 11.0087$$

$$\Sigma XY = 147.92$$

Pupae were placed individually in vials and assigned randomly to the five temperature treatments (X) in physically separated Schmitt insect storage boxes. Percent development per day was recorded for each pupa and the mean percent developed per day calculated (Y).

1. Plot the data. Does a linear relationship seem reasonable?
2. Estimate the regression line for mean percent development per day and superimpose this line on your plot.
3. Calculate the coefficient of determination and check for significance at 5% confidence.