Line of Best Fit

A **line of best fit** or **trend line** is a straight line the best represents the data on a scatter plot. The line may pass through some, one, or none of the existing points on the scatter plot.

The equation of the line can be used to predict future values.

Steps needed

1) Carefully make a scatter plot of the data. Note scale and labels.
2) Use a ruler to sketch the line that best matches the data.
3) Locate two points on the line and approximate the ordered pairs.
4) Using the two points, calculate the slope and find the y-intercept.
5) Write the equation of the line in slope-intercept form; $y = mx + b$

Correlation is how well a set of data can be approximated by a straight line.

Three types:
Positive correlation is a line with a positive slope.
Negative correlation is a line with a negative slope.
No correlation means the points can not be approximated with a straight line.

Data Set

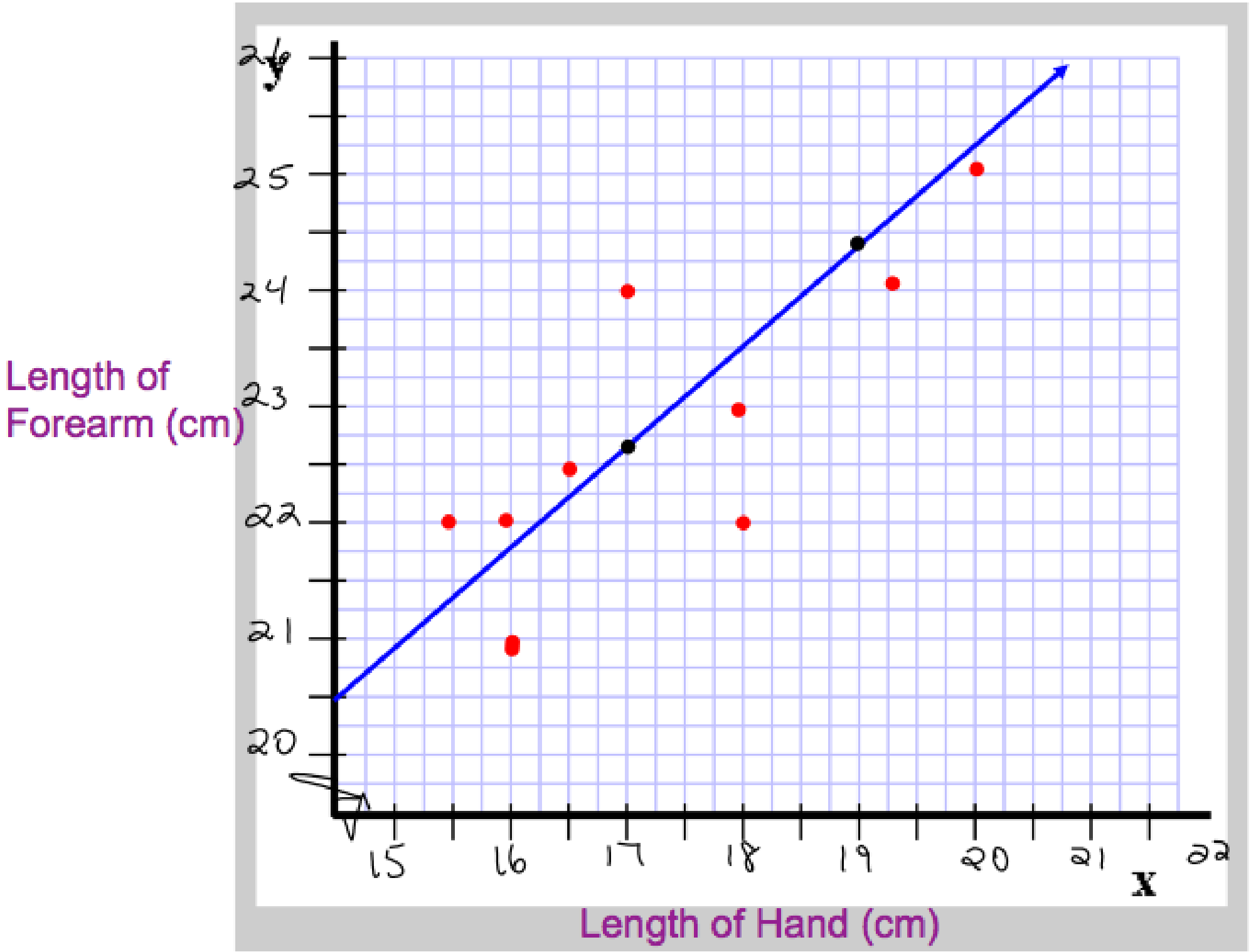
(16, 25) (20, 25) (17.5, 26)

(16, 21) (16.5, 22.5) (15, 26) (16, 22)

(15.5, 25.5) (18, 22) (19, 24)

(16, 21) (17, 25)

(18, 23) (15.5, 22) (17, 24)


Length of Forearm (cm)
26
25
24
23
22
21
20
15
16
17
18
19
20
21
22
x
Length of Hand (cm)

Slope calculation of line using points

$$m = \frac{24.4 - 22.6}{19 - 17} = \frac{1.8}{2} = .9 \text{ or } \frac{9}{10}$$

Equation $y = .9x + 20.5$