

LINEAR LAW

Line of Best Fit

A line of best fit is a straight line that has the following properties:

- (a) The straight line drawn is such that it passes through as many points as possible.
- (b) The number of points that are not passed through by the straight line drawn is more or less the same at both sides of the line.

Applications of linear law to non-linear relations

Changing non-linear relations to the linear form

$$y = ax^2 + bx \text{ [Non-linear]}$$

$$\frac{y}{x} = ax + b \text{ [Linear]}$$

Forming an equation of the line of best fit

$$Y = mX + c$$

Determining values of constants or certain variables of non-linear equations using the gradient and y-intercept of line of best fit

$$y = ax^b \text{ [Non-linear]}$$

$$\lg y = \lg a + b \lg x$$

$$\lg y = b \lg x + \lg a \text{ [Linear]}$$

$$[Y = mX + c]$$

$b = \text{Gradient}$

$\lg a = \text{Y-intercept}$