

## Equations of Straight Lines on Different types of Graph paper

### Linear-Linear paper -- x axis is linear, y axis is linear

$$y = m x + b$$

$$m = (y_2 - y_1) / (x_2 - x_1)$$

b = y value corresponding to x=0

### Semi-log paper -- x axis is logarithmic, y axis is linear

$$y = b + m \log(x)$$

m = difference in y over one log cycle of x

b = y value corresponding to x=1

### Semi-log paper -- x axis is linear, y axis is logarithmic

$$y = b 10^{mx}$$

m = difference in x over one log cycle of y

b = y value corresponding to x=0

### Log-log paper -- Both x and y axes are logarithmic

$$y = b x^a$$

a = slope in log cycles

i.e. number of log cycles on y axis per log cycle on the x axis

b = y value corresponding to x=1

**In all equations, b is in units of the y values, and m is in units of the y values divided by units of the x values.**