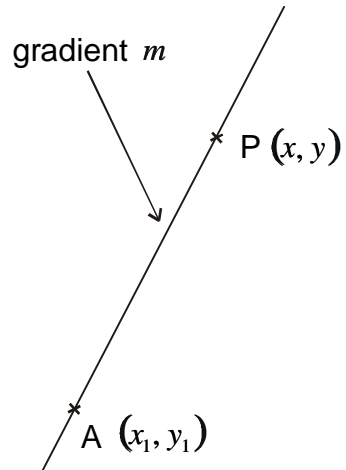


Locus – equation of a straight line

Consider a line that has gradient m and passes through the point $A(x_1, y_1)$.

Suppose $P(x, y)$ is any point on the line.



The gradient of a line joining two points is given by:

$$\frac{\text{rise}}{\text{run}} = \frac{\text{increase in } y}{\text{increase in } x}$$

$$\therefore m = \frac{y - y_1}{x - x_1}$$

multiply both sides by $x - x_1$

$$m(x - x_1) = y - y_1$$

$$y - y_1 = m(x - x_1)$$