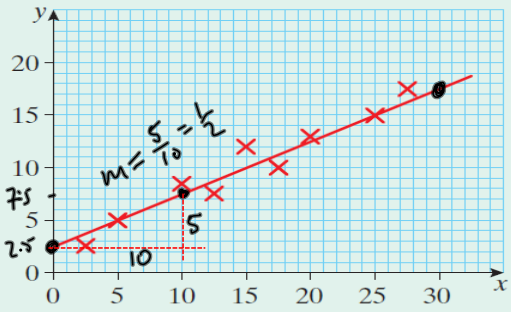
Example 2

This scatter diagram shows the results of a scientific experiment involving two variables x and y.

(i) Find the equation of the line of best fit.

(ii) Assuming that this line is valid for larger values of x, find the value of y when $x = 52$.



equation of line formulae

$y = mx + c$

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

$m = \frac{\text{Rise}}{\text{Run}} = \frac{5}{10} = \frac{1}{2}$

(i) $y = \frac{1}{2}x + 2\frac{1}{2}$

$2y = x + 5$

$x - 2y + 5 = 0$

(ii) $x = 52 \Rightarrow 52 - 2y + 5 = 0$

$y = \frac{+57}{2}$

$y = 28\frac{1}{2}$

* note: the line of best fit is usually drawn by eye-ie. using your own judgement.