



Make m the subject

$$2 = \frac{m+k}{m-t} \quad 2(m-t) = m+k$$

$$2m - 2t = m+k$$

$$m = k + 2t$$

The table below shows information about the ages of the employees for a company.

(80)

Age, x years	Frequency	fx
$20 \leq x < 30$	14	350
$30 \leq x < 35$	20	650
$35 \leq x < 40$	28	1050
$40 \leq x < 50$	x	$45x$
$50 \leq x < 80$	10	650
	$x+72$	$45x+2700$

Miss Rashid calculated the estimated mean from the table as 38.25 years.

Find x

$$\frac{45x+2700}{x+72} = 38.25$$

$$45x+2700 = 38.25x + 2754$$

$$6.75x = 54$$

$$x = 8$$

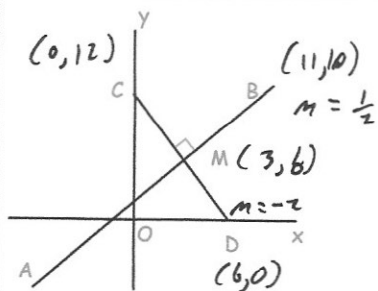
Using your value of x , calculate an estimate of the interquartile range of the ages.

$$60^{\text{th}} - 20^{\text{th}}$$

$$LQ: 30 + \frac{6}{20} \times 5 = 31.5$$

$$UQ: 35 + \frac{26}{28} \times 5 = 39.6428 \dots$$

$$IQR = 8.143 \text{ years}$$



Shown are the straight lines AB and CD.
M is the midpoint of CD
AB is perpendicular to CD and passes through the point M
C is the point (0, 12) and D is the point (6, 0)

Find the equation of AB

$$y = \frac{1}{2}x + c$$

$$6 = 1.5 + c$$

$$c = 4.5$$

$$y = \frac{1}{2}x + \frac{9}{2}$$

B is the point (11, 10)
AM:MB = 5:2 $\left(\frac{8}{4}\right) \div 2 = \left(\frac{4}{2}\right)$

Find the coordinates of the point A

$$\begin{pmatrix} 11 \\ 10 \end{pmatrix} - 2 \begin{pmatrix} 4 \\ 2 \end{pmatrix} = \begin{pmatrix} 3 \\ 6 \end{pmatrix}$$

$$\begin{pmatrix} 3 \\ 6 \end{pmatrix} - 5 \begin{pmatrix} 3 \\ 6 \end{pmatrix} = \begin{pmatrix} -12 \\ -24 \end{pmatrix}$$

$$\begin{pmatrix} -12 \\ -24 \end{pmatrix} + 5 \begin{pmatrix} 3 \\ 6 \end{pmatrix} = \begin{pmatrix} -17 \\ -4 \end{pmatrix}$$