4   The speeds of cars on a road were recorded over a period of time.

The results are recorded in the grouped frequency table.

Speed (s miles per hour)	Frequency	mid-pt x	fx
$20 < s \leqslant 30$	12	25	300
$30 < s \leqslant 40$	16	35	560
$40 < s \leqslant 50$	18	45	810
$50 < s \leqslant 60$	2	55	110
$60 < s \leqslant 70$	2	65	130
	50		1910

(a) How many cars were travelling at more than 40 mph?

$18 + 2 + 2$ Answer ___22___ [1]

(b) Which class interval contains the median speed?

middle   Answer ___$30 < s \leqslant 40$___ [1]

25th or 25.5^{th} value

(c) Calculate an estimate for the mean speed of the cars on the road.

$$\text{Mean} = \frac{\text{sum of } fx}{\text{sum of } f}$$

$$\text{Mean} = \frac{1910}{50}$$

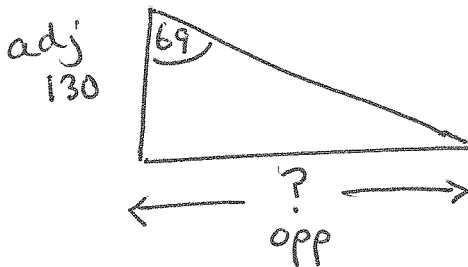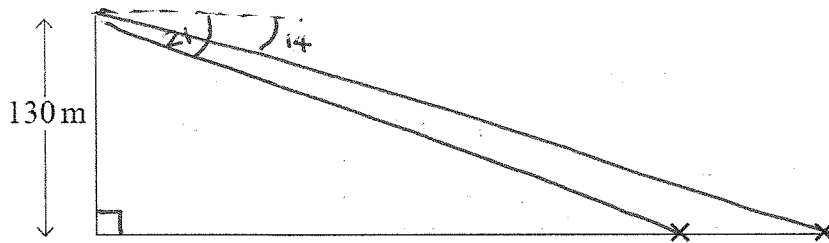$$\text{Mean} = 38.2 \qquad \text{Ans } 38.2 \text{ mph}$$

14 A cliff is 130 m high.

From the top of the cliff, the angles of depression of two boats, both due east and level with each other, are 14° and 21° respectively.

Calculate the distance between the boats.
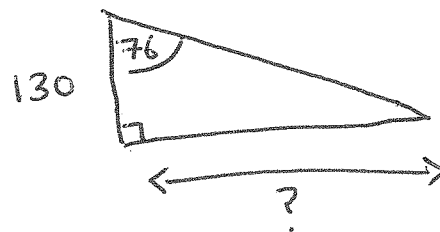
Show all your working clearly.

Trig

$\overset{O}{S}\overset{}{H}$ $\overset{A}{C}\overset{}{H}$ $\overset{O}{T}\overset{}{A}$

130 m

adj
130

$\tan 69 = \dfrac{?}{130}$

$130 \times \tan 69 = ?$

338.7

$339 m$

130

$\tan 76 = \dfrac{?}{130}$

$130 \times \tan 76 = ?$

521.4

521

Answer _____182_____ m [5]

$$\begin{array}{r} 521 \\ -339 \\ \hline 182 \end{array}$$