5: The following grouped frequency distribution summarises the speeds in km/h that a random sample of 225 cars were doing on a road.

Speed (x km/h)	Number of cars
$20 \leqslant x < 25$	54
$25 \leqslant x < 30$	90
$30 \leqslant x < 40$	60
$40 \leqslant x < 55$	15
$55 \leqslant x < 70$	6

A histogram is drawn to represent these data.

The height of the tallest bar is 10 cm.

(a) Calculate the height of the second tallest bar.

(3)

(b) Estimate how many of the 225 cars were doing a speed between 35 km/h and 57 km/h. You must show your working clearly.

(2)

(c) Use linear interpolation to estimate the median speed in km/h for the 225 cars.

(2)

The lower quartile for these data is 25.14 km/h to 4 significant figures.

(d) Find an estimate for

(i) the upper quartile,

(ii) the interquartile range.

(4)

(e) Describe, giving a reason, the skewness of these data.

(2)

Ali suggests that a normal distribution is a suitable model for the speed that cars were doing on this road.

(f) With reference to your answer in part (e), comment on Ali's suggestion, giving a reason for your answer.

(1)

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Question 5 continued

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Question 5 continued

(Total for Question 5 is 14 marks)