

Section 2: Data presentation and interpretation

Exercise level 2

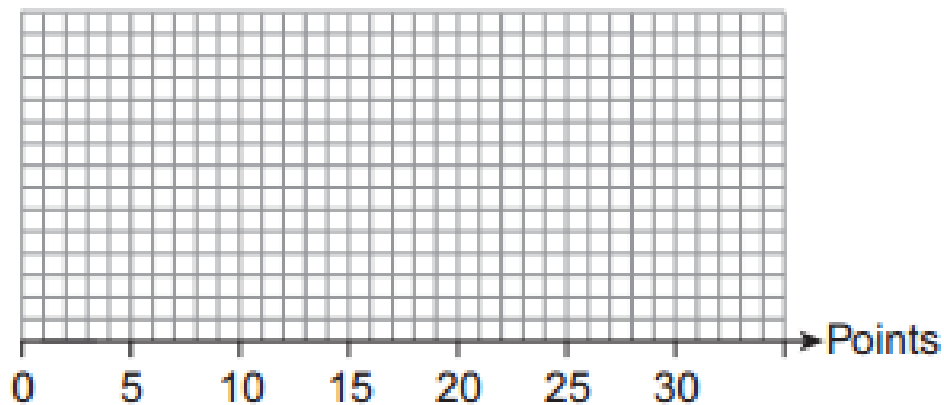
1. Poly and Petr play a game together. The ordered stem-and-leaf diagram below shows the points scored by Poly.

0	9							
1	2	4	5	6	8	9		
2	1	3	3	5	7	8	8	
3	0							

Key: 3 | 0 represents 30 points

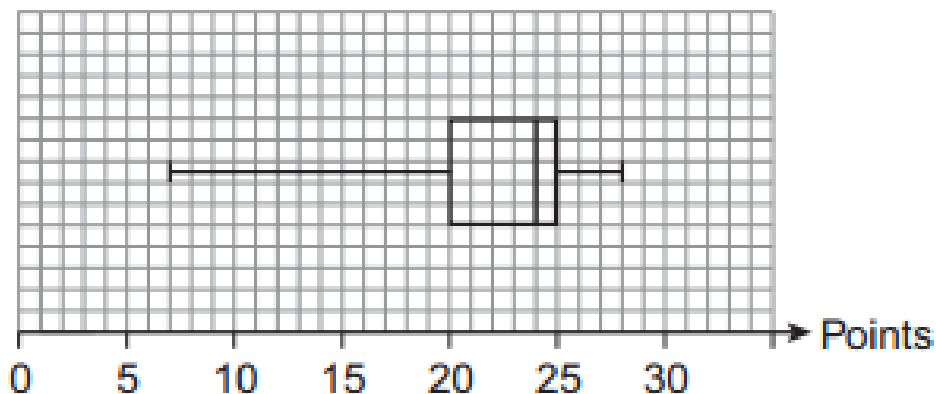
- (i) Draw a box-and-whisker diagram below to represent Poly's score in the game.

Poly's score in the game



This box-and-whisker diagram shows Petr's score in the game:

Petr's score in the game

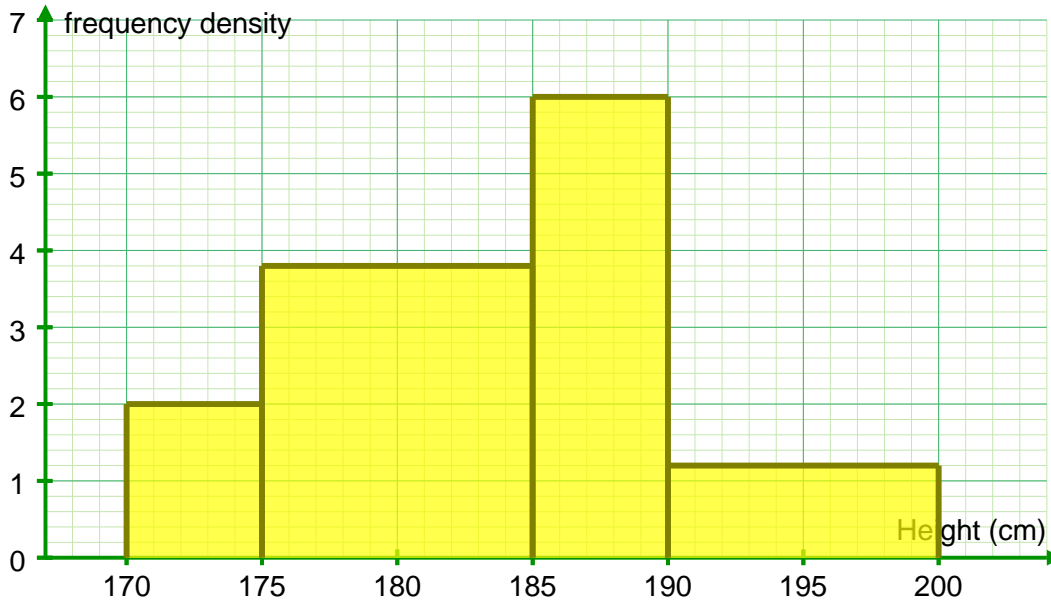


- (ii) Petr says "I have better scores than Poly on average". Do the data support Petr's statement?
- (iii) Petr says "I have more consistent scores than Poly". Do the data support Petr's statement?

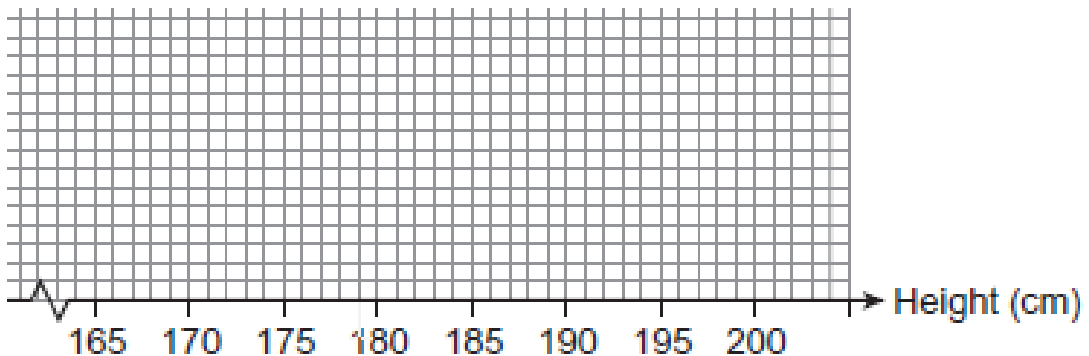
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- (iv) It turns out that it is impossible to score more than 28 points in this game.
Does that affect the answers to (ii) or (iii)?

2. The histogram below shows the heights of recently enlisted soldiers:



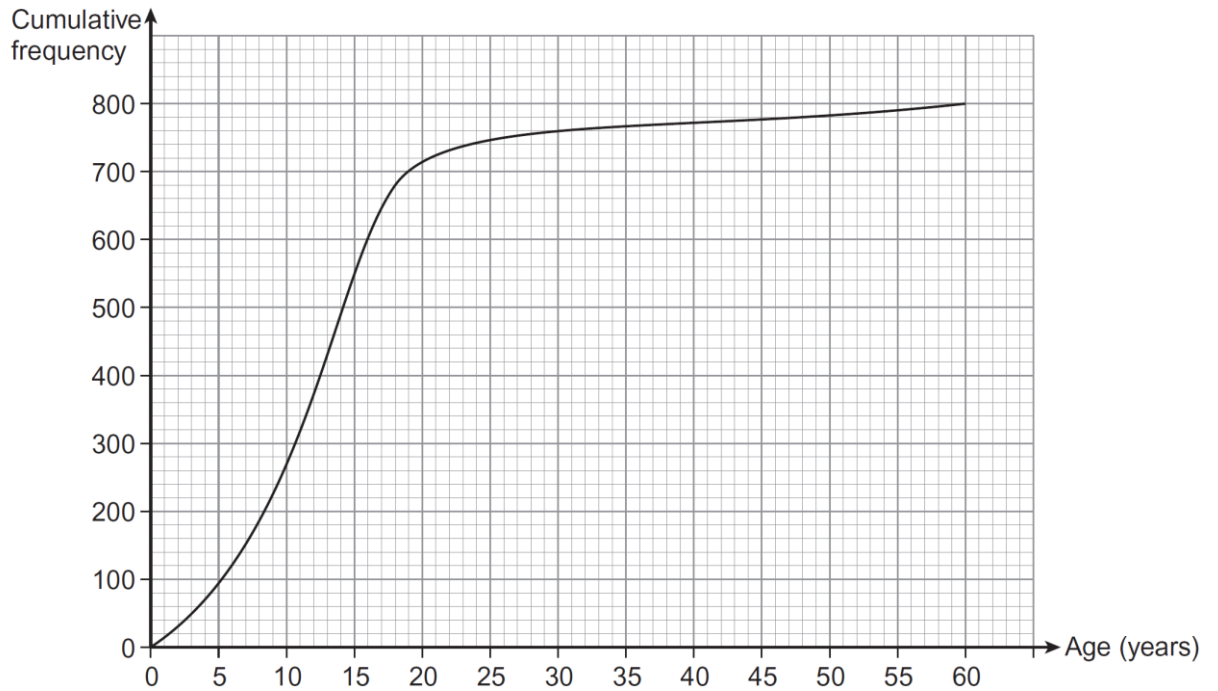
- (i) Which group contains the most soldiers?
- (ii) Which is the modal group?
- (iii) Calculate an estimate of the mean height.
- (iv) Draw a box-and-whisker diagram for the data on the grid below.



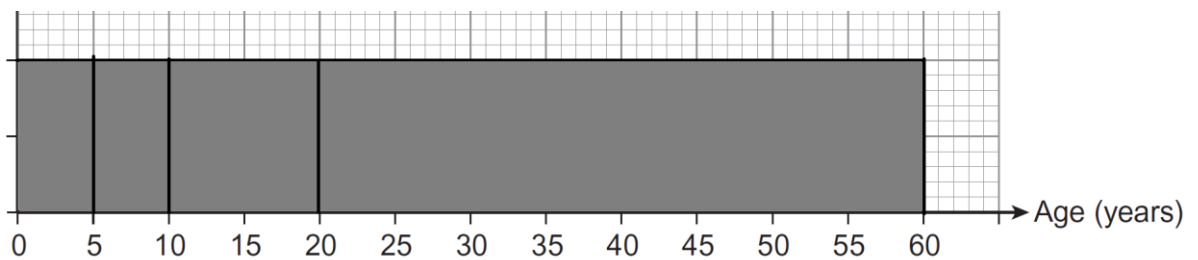
- (v) 10 new recruits join who are all in the 185-190 group. Explain whether the interquartile range will increase or decrease.

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3. The cumulative frequency diagram below shows the ages of people attending a charity concert in a city park:



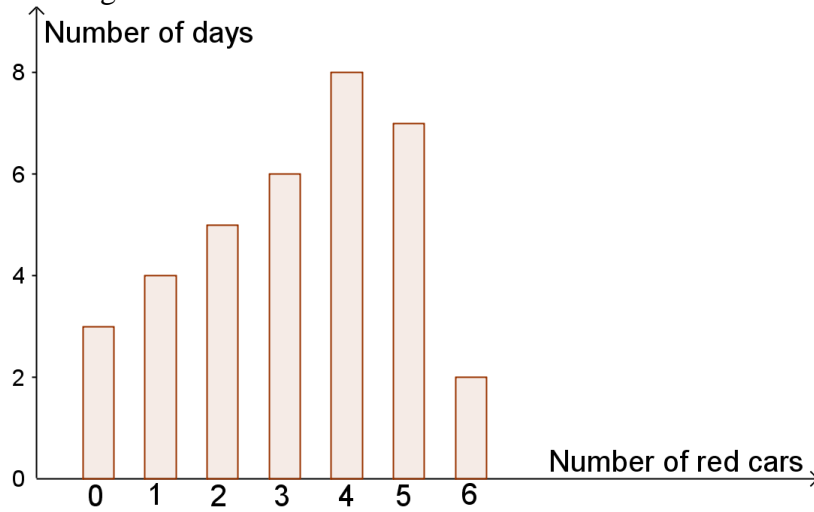
- (i) Billy looks at the cumulative frequency diagram and concludes that the median is 30 because the ages range from 0 to 60 years old. Where has Billy gone wrong?
- (ii) Tickets were £25, with anyone under 18 half price. How much revenue was raised from ticket sales?
- (iii) A journalist from the local newspaper looks at the data and writes the following headline “Danger at charity concert as children are left unsupervised by parents”. Do the data suggest any truth to the headline?
- (iv) The charity concert organisers would like the histogram of ages to look like this at next year’s event:



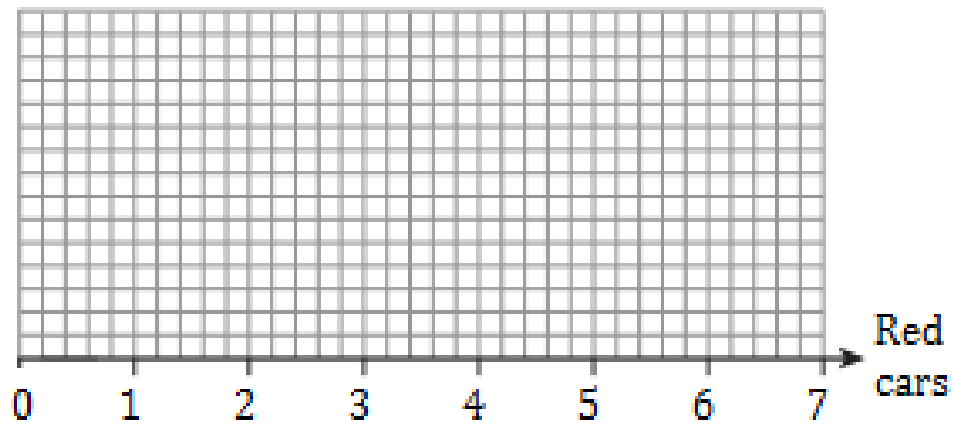
At which age group should they focus their marketing on?

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4. Jane was interested in cars of different colours. Every morning on her way to school she would record the number of red cars parked on her street. She drew the following bar chart to show her data:



- (i) Write down the mode and the median for the number of red cars on her street in the morning.
- (ii) Without doing any calculations, do you think the mean number of red cars is higher or lower than the median number of red cars? Explain your reasoning.
- (iii) Draw a box-and-whisker diagram to represent these data.



- (iv) The next days she observes n red cars, and the interquartile range of the number of red cars decreases. Write down the possible values of n .