

Median from Grouped Data - Linear Interpolation

Workout

Question 1

- (a) 25 cm
- (b) 65 seconds
- (c) 52kg
- (d) 133.33cm
- (e) £5.15
- (f) 59.89cm

Question 2

For the table from Q1(a) - LQ = 21.15cm UQ = 28.85cm IQR = 7.7cm

For the table from Q1(b) - LQ = 49.47 s UQ = 73.33 s IQR = 23.86 s

For the table from Q1(c) - LQ = 47.43kg UQ = 55.4375kg IQR = 8.006kg

For the table from Q1(d) - LQ = 90cm UQ = 173.33cm IQR = 83.33cm

For the table from Q1(e) - LQ = £3.50 UQ = £11.04 IQR = £7.54

For the table from Q1(f) - LQ = 35.345cm UQ = 78.78cm IQR = 43.435cm

Apply

Question 1:

- (a) £23541.67
- (b) £20800
- (c) The Median as a few highly paid workers will affect the mean (the mean is affected by outliers)

Question 2:

- (a) 28.54 months
- (b) 5%
- (c) Bright bulbs as their median lifetime is longer and a much higher proportion last longer than 5 years.

Question 3:

The first years revised for less time on average as their median is 17.073 hours compared to the second years median of 19.52 hours. The amount of time spent revising for the second years was less spread out as their IQR was only 17.09 hours, compared to 25.4583 hours for the first years.

As the time spent revising for the first years was so spread out, a small group of students who revised for a very long time (60-100 hours) brought up their mean to 24.1 hours, compared to the 23.49 hours for the second years. I would therefore say the median is a better average to use in this case.