

Name: \_\_\_\_\_

Show work needed to justify your answer.

Date: \_\_\_\_\_

HW: # 26a: Math IBSL - Standard 25 - Measures of Dispersion (day 2)

5 points

1 The time, in minutes, taken by 100 students to reply to their friends on social media is shown as a cumulative frequency curve.

- a Find the longest time taken to reply.
- b Estimate the median time.

a) 18 minutes

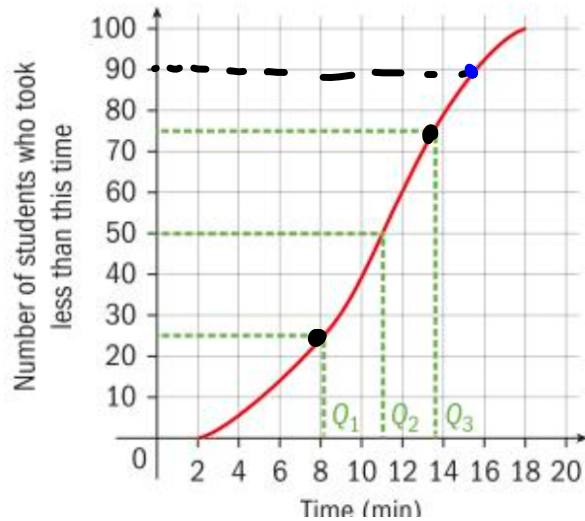
b) 11 minutes

c)  $IQR = 13.9 - 8.1 = 5.8 \text{ min}$

d)  $k \approx 15.6 \text{ minutes}$

c Estimate the interquartile range in time taken to reply.

d 90% of the students replied in  $k$  minutes or less. Find  $k$ .



2 The marks obtained by 100 students are shown on this cumulative frequency curve.

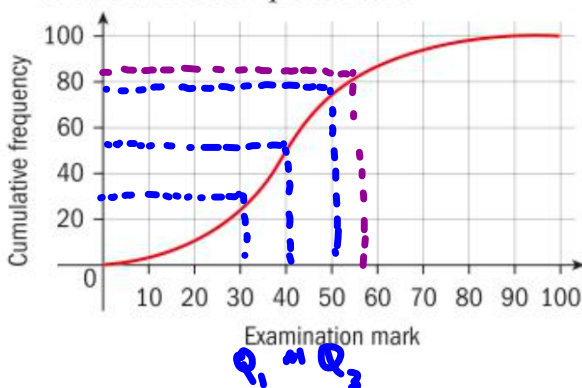
Estimate:

a the median 40

b the interquartile range

$$Q_3 - Q_1 = 50 - 32 = 18$$

c the lowest mark needed to be in or above the 80th percentile  $\approx 55$



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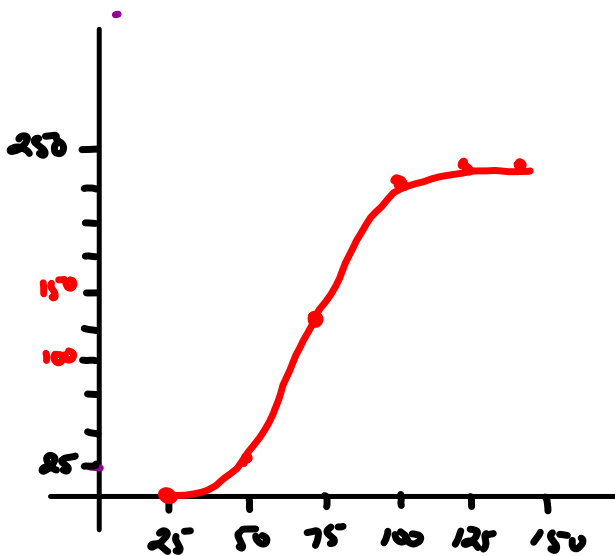
5 points

3 A taxi company recorded the distance (km) travelled by each of its drivers one Saturday evening.

Distance ( $d$ , km)	$f$
$0 < d \leq 25$	0
$25 < d \leq 50$	32
$50 < d \leq 75$	102
$75 < d \leq 100$	86
$100 < d \leq 125$	16
$125 < d \leq 150$	4

CF  
0  
32  
134  
220  
236  
240

- Construct a cumulative frequency table for this information.
- Draw a cumulative frequency diagram.
- Estimate the median distance travelled by the taxi drivers.  $\approx 73$
- Estimate the interquartile range in the distance travelled by the taxi drivers.
- Estimate the number of cars that travelled more than 130 km. 2



$$(d) Q_3 - Q_1 \approx 88 - 60 = \boxed{28}$$

(180) - (60)