PRACTICE 6.4 – Dispersion: Cumulative Frequency

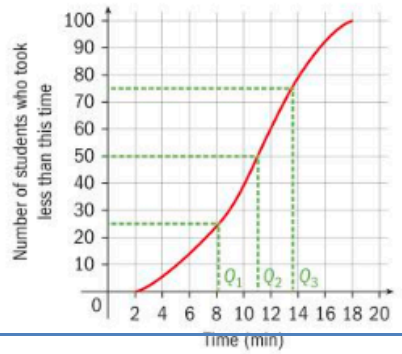
* Full, worked solutions can be found in the folder linked on the Course Website ☺

Exercise 6H

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.



c Estimate the interquartile range in time taken to reply.

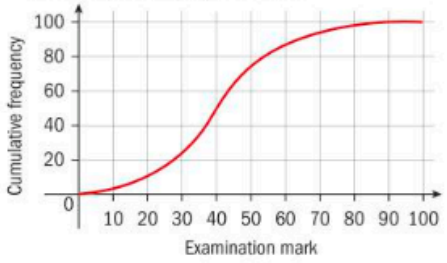
d 90% of the students replied in k minutes or less. Find k.

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

a the median

b the interquartile range

c the lowest mark needed to be in or above the 80th percentile



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

3. continued…

ıble

ım.

led

he

e Estimate the number of cars that travelled more than 130 km.

4 Students were asked to write down the number of pages of English that they had to read in a month.

Pages (p)	f
$100 < p \leq 200$	12
$200 < p \leq 300$	36
$300 < p \leq 400$	42
$400 < p \leq 500$	53
$500 < p \leq 600$	33
$600 < p \leq 700$	20
$700 < p \leq 800$	4

a Construct a cumulative frequency table for this information.

b Draw a cumulative frequency diagram.

c Estimate the median.

d Estimate the interquartile range.

e Estimate the number of students who read more than 450 pages.

5 Match each cumulative frequency curve to its corresponding box-and-whisker plot.