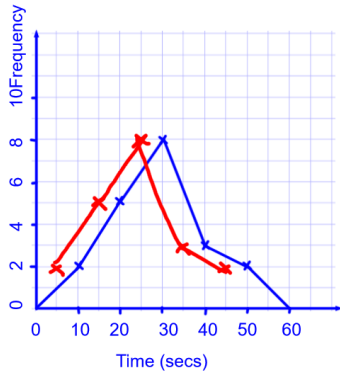


# Lots of DATA 5 PLUS Answers in RED

What is **WRONG** with this frequency polygon?

Time to solve	Frequency
0 < t ≤ 10	2
10 < t ≤ 20	5
20 < t ≤ 30	8
30 < t ≤ 40	3
40 < t ≤ 50	2

Twenty students solved a crossword puzzle. A frequency polygon is drawn.



The points are not placed in the midpoint of the interval

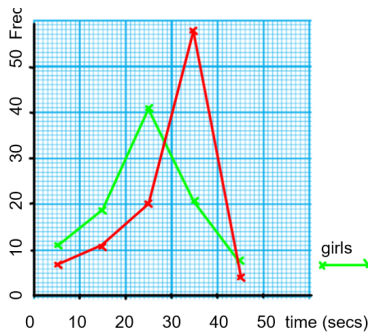
Length of snake (cm)	Frequency
0 < t ≤ 10	10
10 < t ≤ 20	8
20 < t ≤ 30	11
30 < t ≤ 40	7
40 < t ≤ 50	4

Some snakes are measured. Draw a Frequency Polygon.



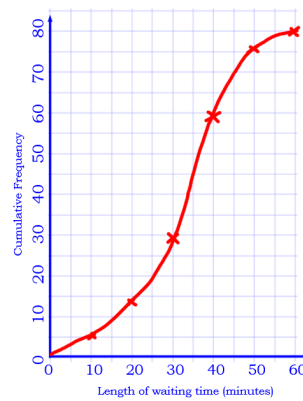
The points should be placed in the midpoint of the interval

Time to solve (mins)	Boys
0 < t ≤ 10	7
10 < t ≤ 20	11
20 < t ≤ 30	20
30 < t ≤ 40	58
40 < t ≤ 50	4



Some boys and girls solved the same logic puzzle. The frequency polygon for girls is drawn. Draw the boys frequency polygon and compare the data.

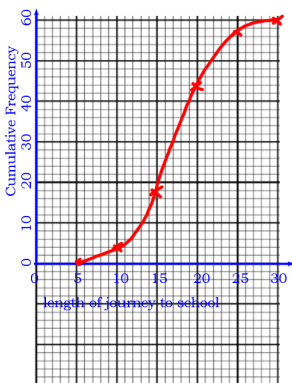
Boys took longer than girls to solve the puzzle. The boys peak is in the interval 30 and 40 secs but the girls peak is 20 and 30 secs.



Using this frequency table draw the cumulative frequency curve

Time	Frequency	cf
0 ≤ t < 10	5	5
10 ≤ t < 20	8	13
20 ≤ t < 30	16	29
30 ≤ t < 40	30	59
40 ≤ t < 50	17	76
50 ≤ t < 60	4	80

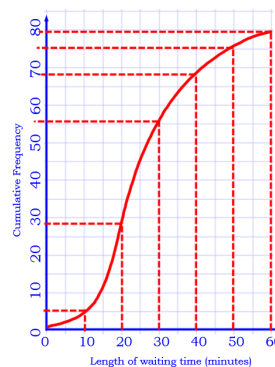
Always plot the point at the top of the interval



Using this frequency table draw the cumulative frequency curve

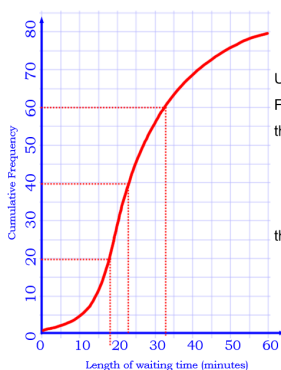
Length	Frequency	cf
0 ≤ d < 5	0	0
5 ≤ d < 10	4	4
10 ≤ d < 15	14	18
15 ≤ d < 20	26	44
20 ≤ d < 25	13	57
25 ≤ t < 30	3	60

Always plot the point at the top of the interval



Using this cumulative frequency curve. Fill in the frequency table

Time	Frequency
0 ≤ t < 10	5
10 ≤ t < 20	29 - 5 = 24
20 ≤ t < 30	56 - 29 = 27
30 ≤ t < 40	68 - 56 = 12
40 ≤ t < 50	75 - 68 = 7
50 ≤ t < 60	80 - 75 = 5



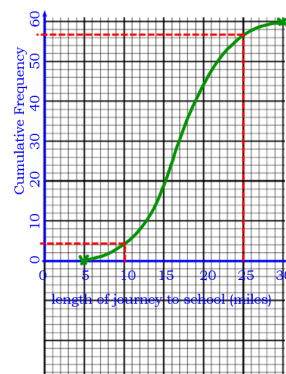
Using this cumulative frequency curve.

Find the median?

Median = 23

the IQR?

Lower Quartile = 18  
Upper Quartile = 33  
IQR = UQ - LQ  
IQR = 15



This cumulative frequency curve shows the length of journey to school. What was the shortest length of journey?

shortest = 5 miles

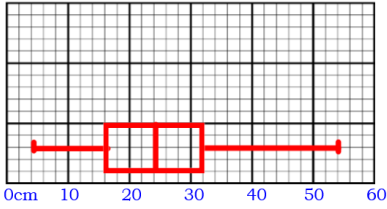
How many travelled less than 10 miles?

4 travelled less than 10 miles

How many travelled more than 25 miles?

3 travelled more than 25 miles

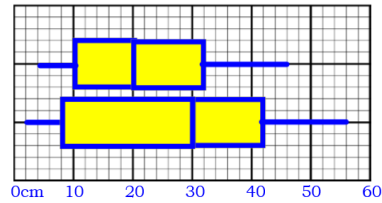
Draw the box plot



Lowest value	4
Lower Quartile	16
Median	24
Upper Quartile	32
Highest value	54
IQR	16

$IQR = UQ - LQ$   
 $16 = 32 - 16$

River A

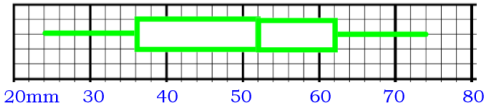


These are 2 box plots that show the lengths of fish in 2 different rivers.  
 Compare the lengths of the fish.

River B

*River A has IQR = 22, range = 42 and median = 20*  
*River B has IQR = 34, range = 54 and median = 30*  
*River B has a wider variety of the lengths of fish by looking at the IQR and Range.*  
*River B has the longer fish by looking at the medians.*

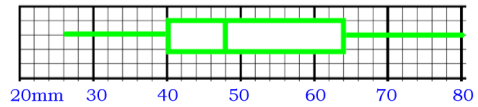
True or False?



- Q1 50% are longer than 51mm
- Q2 The longest is 74mm
- Q3 The Upper Quartile is 62mm.

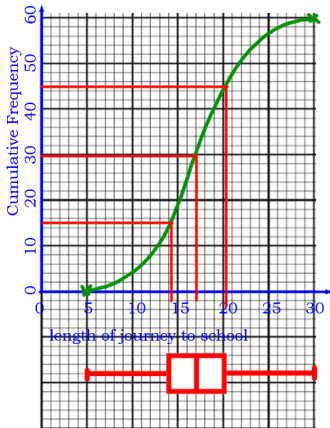
*Q1 False. 50% are longer than 52mm*  
*Q2 True*  
*Q3 True*

True or False?

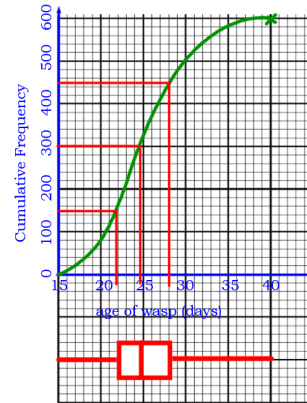


- Q1 The longest 25% are longer than 66mm
- Q2 The shortest is 26mm
- Q3 The IQR is 22mm

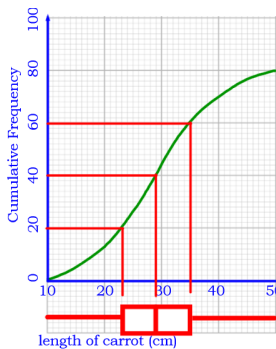
*Q1 False. Longest 25% are longer than 64mm*  
*Q2 True*  
*Q3 False. The IQR is 24mm*



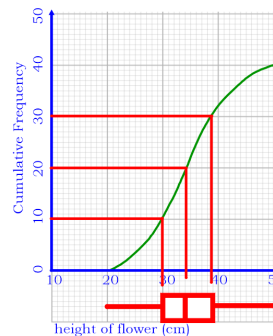
Using this cumulative frequency curve find  
 the median?  
*Look half way Median = 17mins*  
 the IQR?  
*UQ = 20 and LQ = 14*  
*IQR = UQ - LQ*  
*IQR = 20 - 14 = 6*  
 Draw the box plot for this curve below



Using this cumulative frequency curve find  
 the median?  
*Look half way Median = 24.5days*  
 the IQR?  
*UQ = 28 and LQ = 22*  
*IQR = UQ - LQ*  
*IQR = 28 - 22 = 6*  
 Draw the box plot for this curve below



Using this cumulative frequency curve find  
 the median?  
*Look half way Median = 29cm*  
 the IQR?  
*UQ = 35 and LQ = 23*  
*IQR = UQ - LQ*  
*IQR = 35 - 23 = 12cm*  
 Draw the box plot for this curve below



Using this cumulative frequency curve find  
 the median?  
*Look half way Median = 35cm*  
 the IQR?  
*UQ = 39 and LQ = 30*  
*IQR = UQ - LQ*  
*IQR = 39 - 30 = 9cm*  
 Draw the box plot for this curve below