Cumulative frequency graphs

1

The times 30 people took to solve a puzzle. Complete the table.
How many are 30 seconds or less?

Time, t (seconds)	Frequency	Cumulative frequency
$0 < t \leq 10$	5	**5**
$10 < t \leq 20$	8	**13**
$20 < t \leq 30$	11	
$30 < t \leq 40$	6	

Answer _____

2

The lengths of 32 leaves.
Complete the table. How many are 8 cm or less?

Length, l (cm)	Frequency	Cumulative frequency
$4 < l \leq 6$	6	**6**
$6 < l \leq 8$	10	
$8 < l \leq 10$	12	
$10 < l \leq 12$	4	

Answer _____

3

The ages of 36 people at a gig.
Complete the table. How many are 40 years old or less?

Age (years)	Frequency	Cumulative frequency
$20 < a \leq 30$	9	
$30 < a \leq 40$	14	
$40 < a \leq 50$	8	
$50 < a \leq 60$	5	

Answer _____

4

The masses of 40 apples.
Complete the table. How many are 160 g or less?

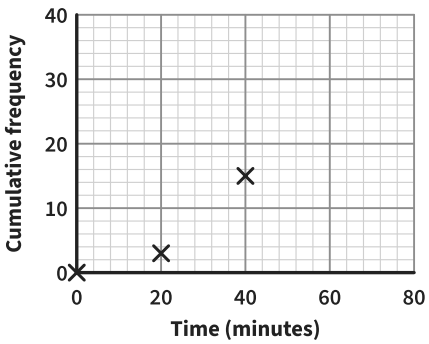
Mass, m (g)	Frequency	Cumulative frequency
$100 < m \leq 120$	4	
$120 < m \leq 140$	7	
$140 < m \leq 160$	13	
$160 < m \leq 180$	10	
$180 < m \leq 200$	6	

Answer _____

5

The time 40 students spent on homework.
Complete the table. Draw the cumulative frequency graph.

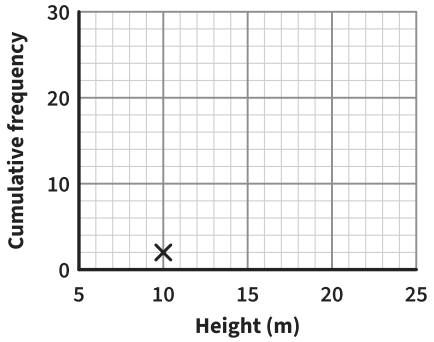
Time, t (minutes)	Cumulative frequency	Point
$0 < t \leq 20$	3	**(20, 3)**
$20 < t \leq 40$	15	**(40, 15)**
$40 < t \leq 60$	31	
$60 < t \leq 80$	40	



6

The heights of 30 trees.
Complete the table. Draw the cumulative frequency graph.

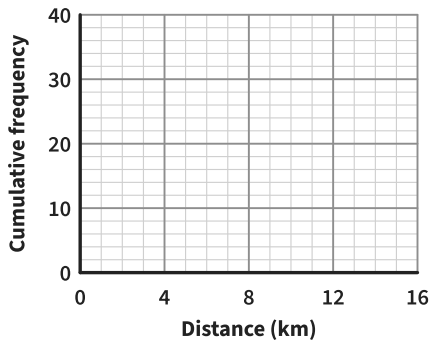
Height, h (m)	Cumulative frequency	Point
$5 < h \leq 10$	2	**(10, 2)**
$10 < h \leq 15$	11	
$15 < h \leq 20$	22	
$20 < h \leq 25$	30	



7 *Notice the change!*

How far 36 people live from school.
Complete the table. Draw the cumulative frequency graph.

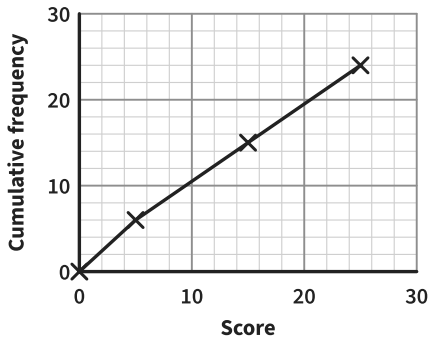
Distance, d (km)	Freq.	Cumulative frequency	Point
$0 < d \leq 4$	5		
$4 < d \leq 8$	11		
$8 < d \leq 12$	14		
$12 < d \leq 16$	6		



8

Leo draws this graph for the table.
Explain his mistake.

Score, s	Frequency	Cumulative frequency
$0 < s \leq 10$	6	**6**
$10 < s \leq 20$	9	**15**
$20 < s \leq 30$	9	**24**



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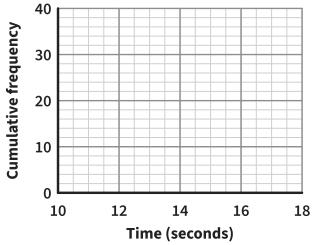
Cumulative frequency graphs *further practice*

9

32 runners. Complete the table and draw the graph. How many took 14 seconds or less?

Time, t (s)	Frequency	Cumulative frequency
$10 < t \leq 12$	4	
$12 < t \leq 14$	10	
$14 < t \leq 16$	12	
$16 < t \leq 18$	6	

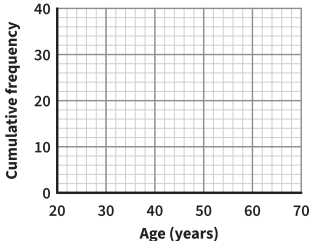


Answer _____

10

The ages of 40 people at a concert. Draw the graph. Where does it start?

Age (years)	Frequency	Cumulative frequency
$20 < a \leq 30$	8	
$30 < a \leq 40$	12	
$40 < a \leq 50$	10	
$50 < a \leq 60$	6	
$60 < a \leq 70$	4	



Answer _____

11

The cumulative frequencies are given. Work out the frequency of each class.

Mark	Cumulative frequency	Frequency
$0 < m \leq 10$	6	
$10 < m \leq 20$	15	
$20 < m \leq 30$	27	
$30 < m \leq 40$	32	

Answer _____

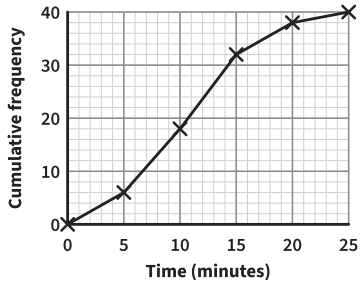
12

The class $40 < m \leq 50$ has a cumulative frequency of 31.
Which point is plotted? Explain why it is not (45, 31).

Point _____

13

40 people waited for a bus.
How many waited 15 minutes or less?
How many waited more?

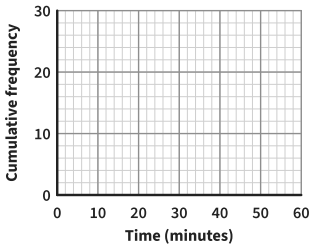


Answer _____

14

30 shoppers. Draw the graph.
How many spent 30 minutes or less?

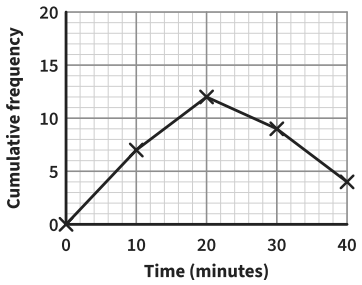
Time, t (min)	Frequency	Cumulative frequency
$0 < t \leq 10$	4	
$10 < t \leq 30$	15	
$30 < t \leq 40$	9	
$40 < t \leq 60$	2	



Answer _____

15

Max says this is a cumulative frequency graph. Explain how you know he is wrong.



Reason _____

16

Fill in the gaps in the table.

Score	Frequency	Cumulative frequency
$0 < s \leq 5$	5	5
$5 < s \leq 10$		17
$10 < s \leq 15$	14	
$15 < s \leq 20$	6	

Answer _____