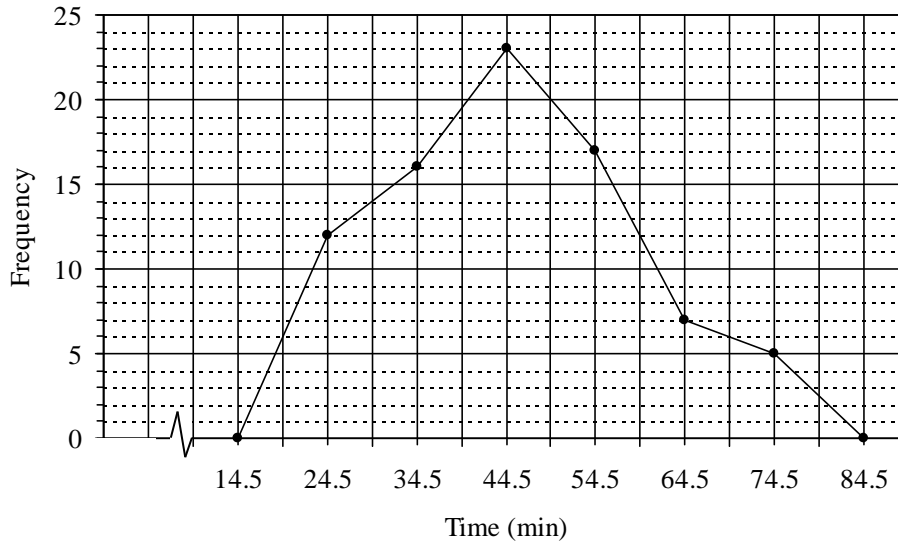# TB(2A) Ch. 6 More about Statistical Diagrams
Conventional Questions

1. **[13-14 S.3 Final Exam, #7]**
    The following frequency polygon shows the time (in min) spent on watching TV every day by 80 S.3 students.

The time spent on watching TV every day by 80 S.3 students

(a)   Complete the following table.
(2 marks)

Class interval (min)	Class boundaries (min)	Class mark (min)	Frequency
20 – 29		24.5	12

(b) What percentage of students watches TV for 39.5 min or more every day?   **(1 mark)**

(c) Write down the mean and the modal class of the time spent on watching TV.   **(2 marks)**

(d) If the time spent by 70% of the students is between 29.5 min and x min.   Write down the value of x.   **(1 mark)**

2. **[14-15 S.2 Final Exam #7]**

The frequency distribution table below shows the exam marks of 40 students.

Marks	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 – 80
Frequency	3	5	16	7	6	3

(a) Complete the cumulative frequency table below.   **(1 mark)**

Marks less than						
Cumulative frequency						

(b) Construct a cumulative frequency polygon on the graph paper provided.   **(2 marks)**
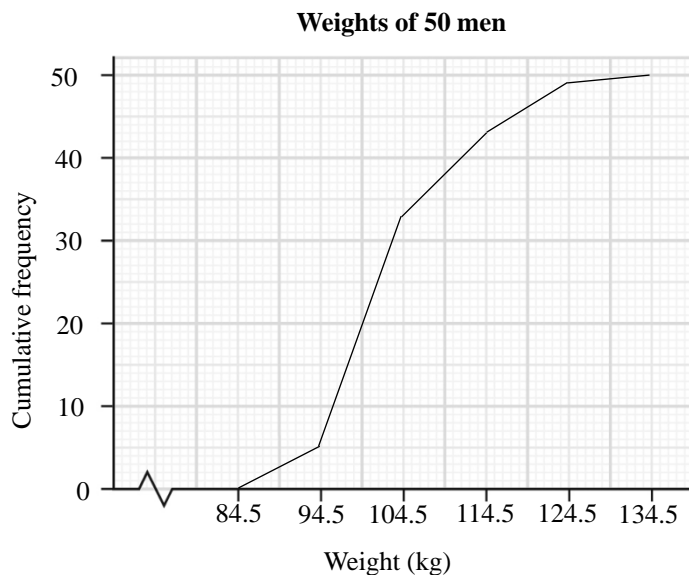
Cumulative Frequency Polygon of Exam Marks of 40

Exam Marks
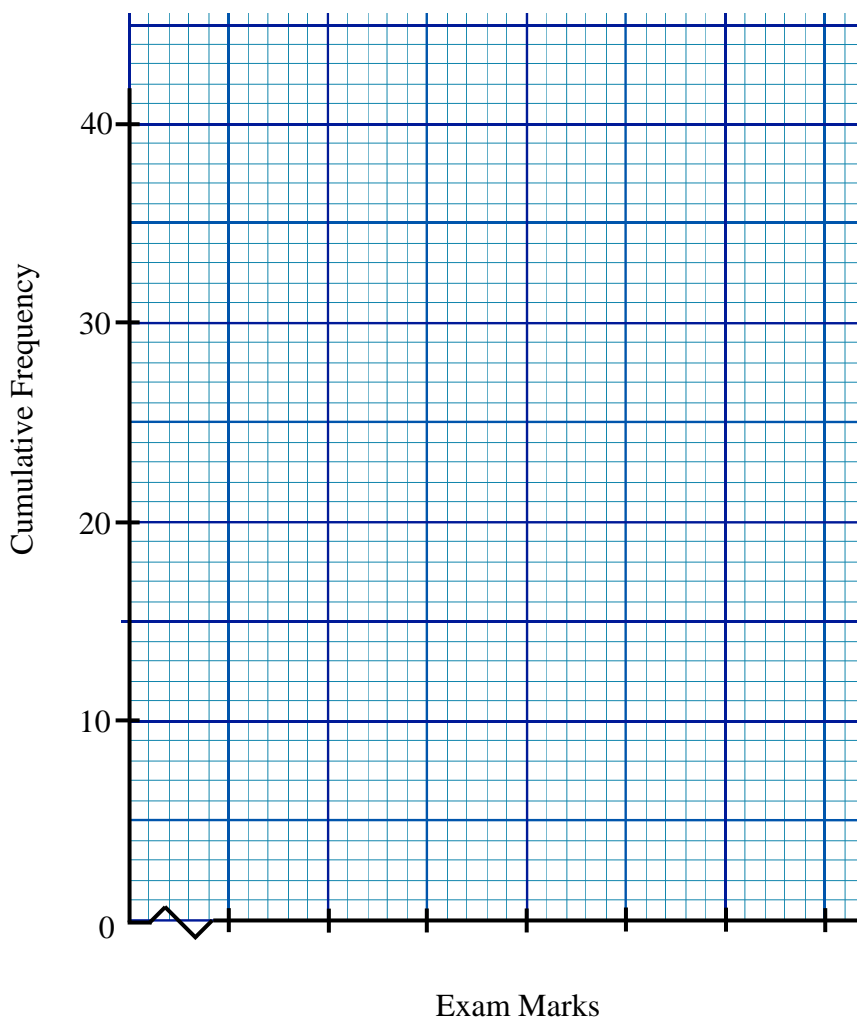
(c) Write down the 60th percentile.   **(1 mark)**

3. **[14-15 S.3 Final Exam #3]**

(a)

84.5	94.5	104.5	114.5	124.5	134.5	**----1A**
0	5	33	43	49	50	**----1A**

②

(b)

Weights of 50 men

Cumulative frequency vs Weight (kg)

Plot ----1A, x-axis ----1A
If wrong in table, wrong plot ----1A,
 start from 94.5 -----0A

②

(c)   **94.5 kg**   ----1A (depends on 2nd column in (a))
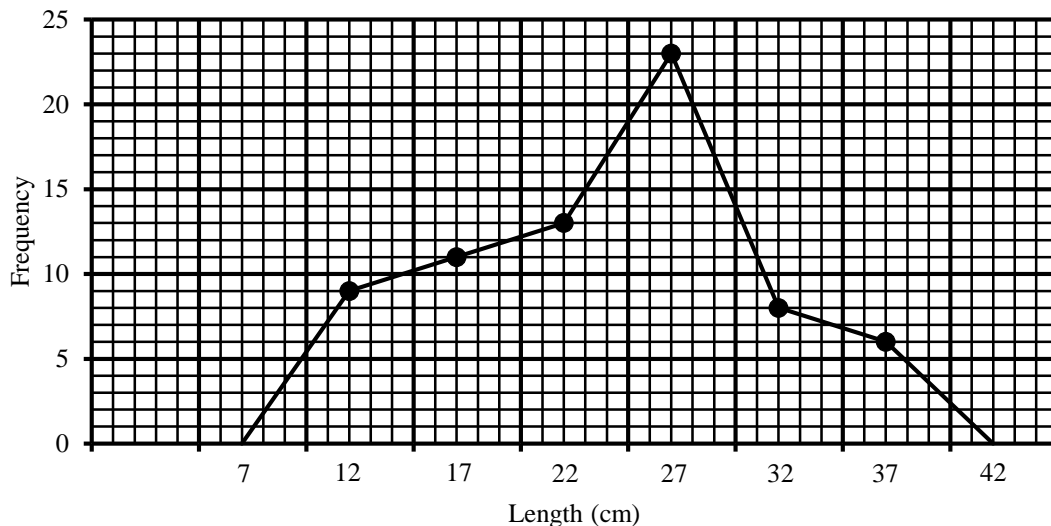
ⓛ

(d)   **117.5 kg** $\pm 1kg$ ----1A (depends on result in (b))

ⓛ

4.   **[15-16 S.2 Mid-year Exam #11]**

Lengths of a group of fish

The above frequency polygon shows the lengths (in cm) of a group of fish in a fish pond.

(a)   Complete the table below.   **(2 marks)**

Length (cm)	10 – 14					35 – 39
Frequency		11		23		

(b) How many fish are there in the fish pond?   **(1 mark)**

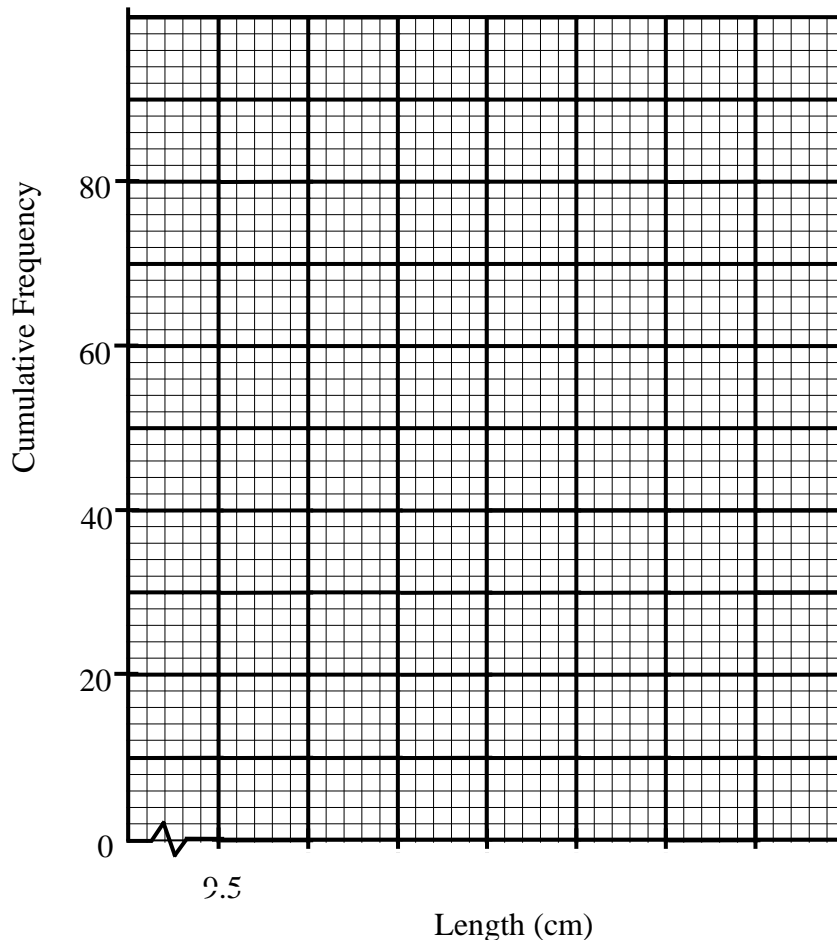**(c)** Find the number of fish with lengths shorter than 24.5 cm.   **(1 mark)**

(d) **(i)** Complete the following cumulative frequency table.   **(1 mark)**

Length less than (cm)							
Cumulative Frequency							

(ii) Construct a cumulative frequency polygon on the graph paper provided.   **(2 marks)**

Cumulative Frequency Polygon of Lengths of a group of fish

Length (cm)

5. **[16-17 S.2 Mid-year Exam #8]**

The following frequency distribution table shows the result of 40 participants in stage 1 of a competition.
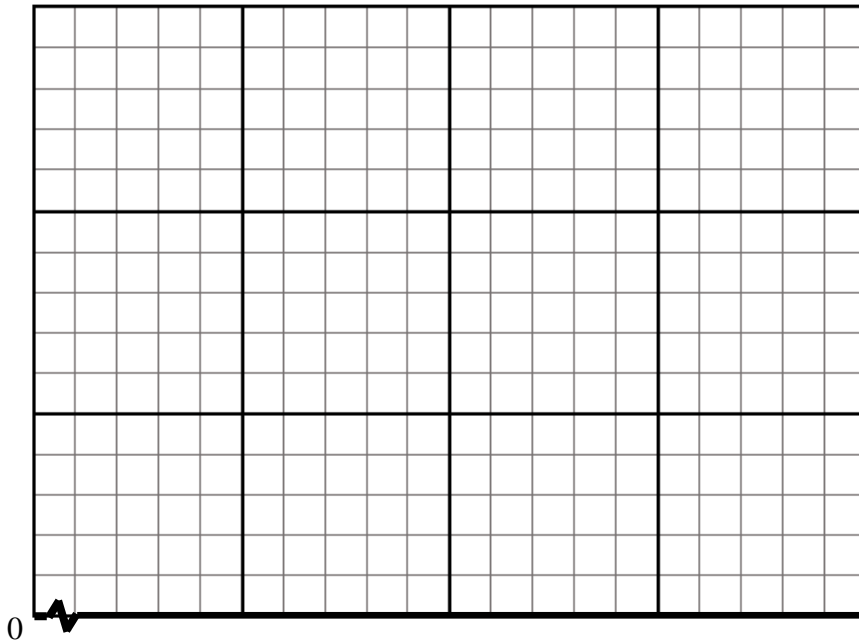
(a) Complete the table below.   **(1 mark)**

Score	Class boundaries	Class mark	Frequency
50 – 99		74.5	9
100 – 149		124.5	10
150 – 199		174.5	11
200 – 249		224.5	5
250 – 299		274.5	5

(b)   Draw a histogram to present the above data.   **(3 marks)**

Title:

0

(c)   Participants get score lower than 99.5 will be considered as failed and they cannot continue for stage 2; participants get score higher than 249.5 score will skip stage 2 and enter the final stage directly. Find the percentage of participants who DO NOT need to join stage 2.   **(2 marks)**

6.   **[16-17 S.2 Final Exam #7]**
The frequency distribution table below shows the distribution of the heights of 40 plants in a garden.

| Height (cm)	10 – 39	40 – 69	70 – 99	100 – 129	130 – 159	160 – 189
Frequency	2	4	7	9	15	3

(a) Complete the corresponding cumulative frequency distribution table below.   **(1 mark)**

Height (cm) less than	9.5	39.5	69.5	99.5	129.5	159.5	189.5
Cumulative frequency							

(b) Construct a cumulative frequency polygon on the graph provided.   **(2 marks)**

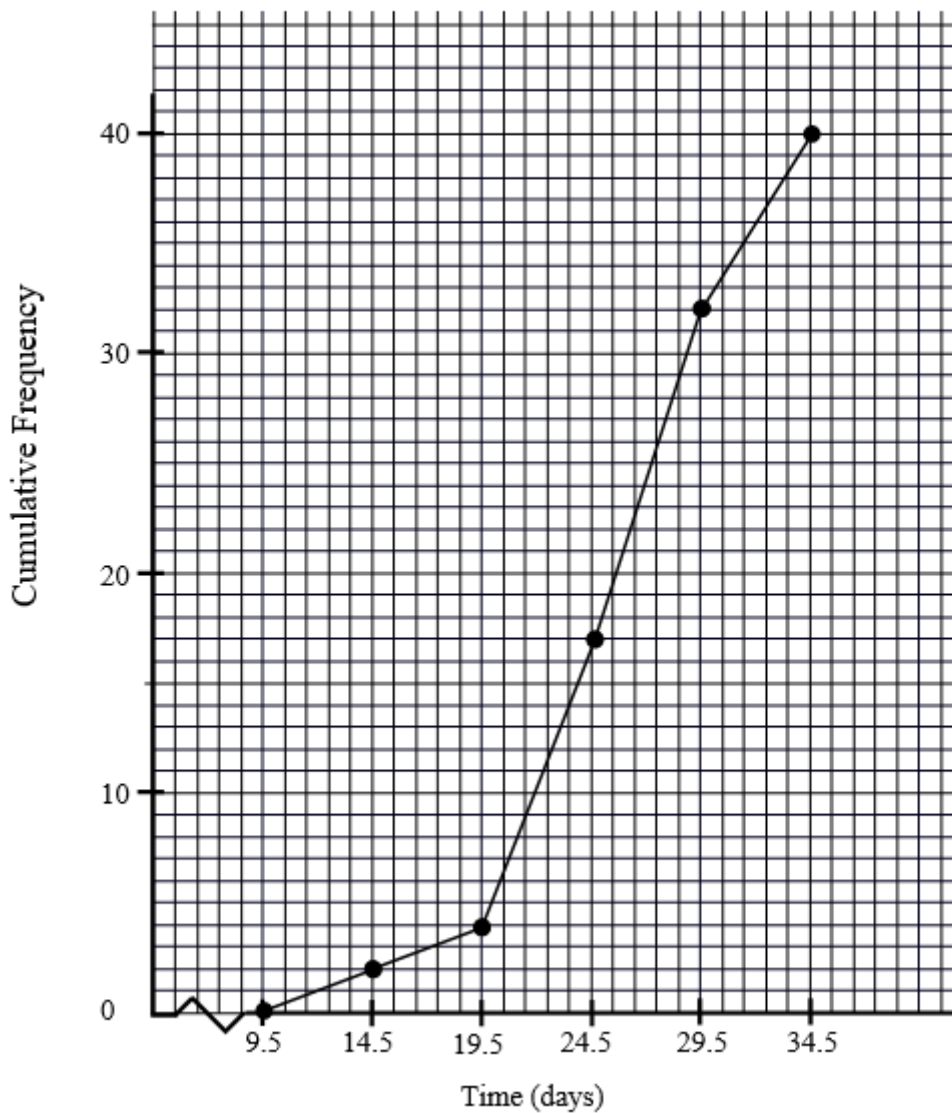Cumulative Frequency Polygon of the
Heights of 40 Plants in a Garden
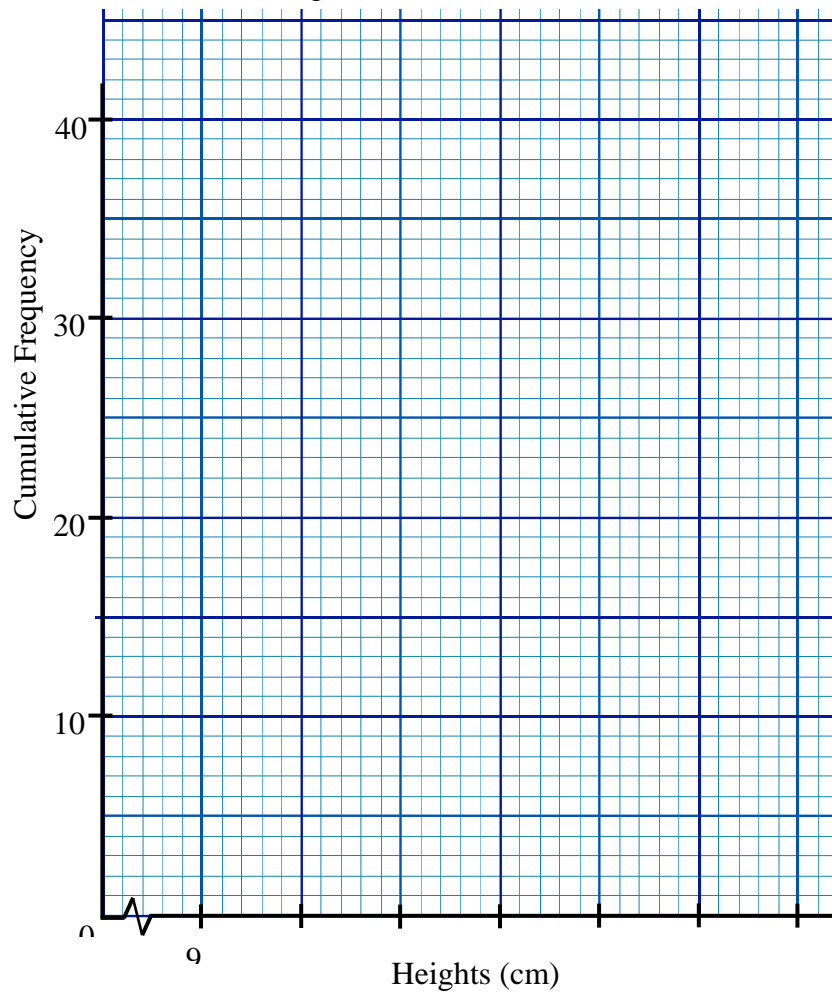
(c) Write down the 70th percentile of the heights of the plants. **(1 mark)**

7.   **[17-18 S.2 Mid-year Exam #11]**

The cumulative frequency polygon in **Figure 1a** shows the time (in days) taken by 40 children to learn cycling.

Time of 40 children to learn cycling

Figure 1a

(a)   Write down the values of *a*, *b*, *c* and *d* in the following distribution table and the cumulative frequency table for the above diagram.   **(2 marks)**

Time (days)	Frequency
10 – 14	*a*
15 – 19	2
20 – 24	*b*
25 – 29	15
30 – 34	8

Time less than (days)	Cumulative frequency
9.5	0
14.5	2
19.5	*c*
24.5	*d*
29.5	32

34.5	40

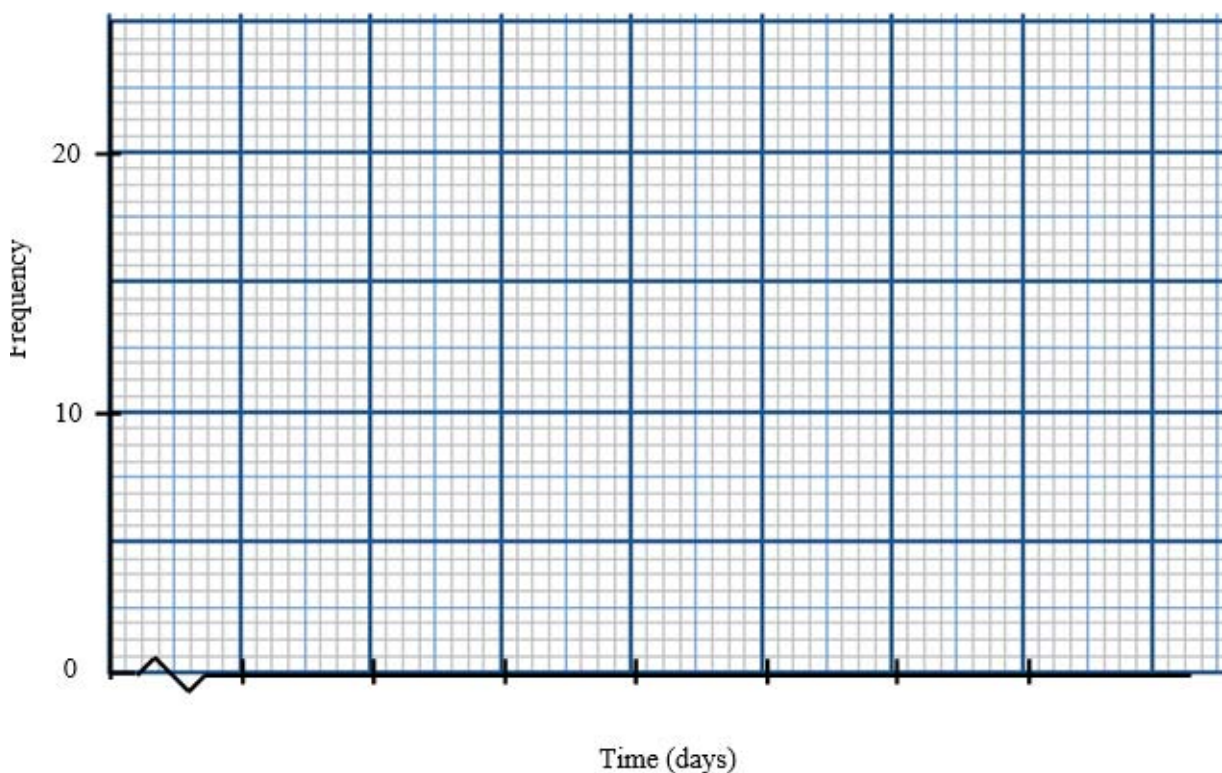**Table 1**   **Table 2**

(b)   Find the median time for the children to learn cycling.   **(1 mark)**

(c)   Children who are good at sports can learn cycling within 23.5 days. Find the percentage of
children who are good at sports.   **(2 marks)**

(d)   Construct the frequency polygon to present the above data.   **(2 marks)**

Time (days)

Figure 1b

~ End ~