c Use the cumulative frequency curve to complete the following table:

Time t (min)	$5 \leqslant t < 10$	$10 \leqslant t < 15$	....	$35 \leqslant t < 40$
Frequency				

REVIEW SET 20B CALCULATOR

1 The data below shows the distance in metres that Thabiso threw a baseball:

71.2	65.1	68.0	71.1	74.6	68.8	83.2	85.0	74.5	87.4
84.3	77.0	82.8	84.4	80.6	75.9	89.7	83.2	97.5	82.9
90.5	85.5	90.7	92.9	95.6	85.5	64.6	73.9	80.0	86.5

a Determine the highest and lowest value for the data set.

b Choose between 6 and 12 groups into which all the data values can be placed.

c Prepare a frequency distribution table.

d Draw a frequency histogram for the data.

e Determine:

i the mean **ii** the median.

2 Consider the data set: $k-2,\ k,\ k+3,\ k+3$.

a Show that the mean of the data set is equal to $k+1$.

b Suppose each number in the data set is increased by 2. Find the new mean of the data set in terms of k.

3 Consider the following distribution of continuous grouped data:

Scores	$0 \leqslant x < 10$	$10 \leqslant x < 20$	$20 \leqslant x < 30$	$30 \leqslant x < 40$	$40 \leqslant x < 50$
Frequency	1	13	27	17	2

a Construct a cumulative frequency graph for the data.

b Estimate the median of the data. **c** Estimate the interquartile range.

d Estimate the mean and standard deviation.

4 The number of litres of petrol purchased by a random sample of motor vehicle drivers is shown alongside. Estimate the mean and standard deviation of the number of litres purchased by vehicles:

a in this sample

b in the population from which this sample was taken.

Litres	*Number of vehicles*
$15 \leqslant l < 20$	5
$20 \leqslant l < 25$	13
$25 \leqslant l < 30$	17
$30 \leqslant l < 35$	29
$35 \leqslant l < 40$	27
$40 \leqslant l < 45$	18
$45 \leqslant l < 50$	7

5 Katja's golf scores for her last 20 rounds were:

90	106	84	103	112	100	105	81	104	98
107	95	104	108	99	101	106	102	98	101

a Find the:
i median **ii** lower quartile **iii** upper quartile.

b Find the interquartile range of the data set.

c Find the mean and standard deviation of her scores.

6 The table alongside shows the number of matches in a sample of boxes.

Number	47	48	49	50	51	52
Frequency	21	29	35	42	18	31

a Find the mean and standard deviation for this data.

b Does this result justify a claim that the average number of matches per box is 50?

7 Consider the data set: 120, 118, 132, 127, 135, 116, 122, 93, 128.

a Find the standard deviation for the data.

b Find the upper and lower quartiles of the data set.

c Are there any outliers in the data set?

d Draw a boxplot to display the data.

8 Katie loves cats. She visits every house in her street to find out how many cats live there. The responses are given below:

Number of cats	*Frequency*
0	36
1	9
2	11
3	5
4	1
5	1

a Draw a graph to display this data.

b Describe the distribution.

c Find the:
i mode **ii** mean **iii** median.

d Which of the measures of centre is most appropriate for this data? Explain your answer.

REVIEW SET 20C

1 The winning margin in 100 basketball games was recorded. The results are given alongside:

Margin (points)	*Frequency*
1 - 10	13
11 - 20	35
21 - 30	27
31 - 40	18
41 - 50	7

a Is the winning margin discrete or continuous?

b Draw an appropriate graph to represent this information.

c Can you calculate the mean winning margin exactly? Explain your answer.