



# CLASSIFIED

International Examinations Papers

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## **MATHEMATICS - CORE**

### **TOPIC- Statistics**

### **(Pie Charts and Pictograms)**

01 The pictogram shows information about the numbers of different drinks sold in a café in one hour.

Coffee	
Tea	
Hot chocolate	
Juice	

Key: represents 4 cups

- (a) In this hour, 14 cups of hot chocolate were sold.  
Complete the pictogram using this information. [1]
- (b) How many more cups of coffee than cups of tea were sold?

Answer(b) ..... [1]

7 The stem and leaf diagram shows the heights of 14 plants.

0		7 8 8 9
1		1 3 6 7 9
2		0 1 2
3		2 4

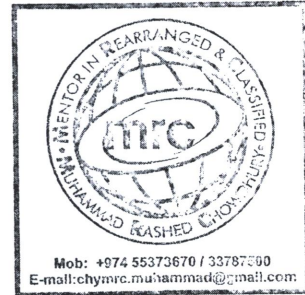
Key 1 | 3 means 13 cm

- (a) Find the median.

Answer(a) ..... cm [2]

- (b) Find the interquartile range.







Answer(b) ..... cm [2]




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12/11/13

- 02** : Paolo's football team played 46 games.  
The pictogram shows some information about the number of goals scored by Paolo's football team.  
They did not score any goals in five games.

Number of goals	Number of games
0	
1	
2	
3	
4	
5	
6	

Key:  = ..... games

- (a) (i) Complete the key. [1]

- (ii) Paolo's team scored 2 goals in each of nine games.

Complete the pictogram. [1]

- (b) (i) Write down the modal number of goals.

Answer(b)(i) ..... [1]

- (ii) Find the median number of goals.

Answer(b)(ii) ..... [1]

- (iii) Find the range.

Answer(b)(iii) ..... [1]

- (iv) One of the 46 games is chosen at random.

Work out the probability that Paolo's team scored at least 4 goals.

Answer(b)(iv) ..... [2]

- (a) A group of 50 children were each asked which type of book they most like to read. The pictogram shows some of the results.

Type of book	Number of children
Adventure	○○○
Horror	
History	○
Comedy	○○○
Fantasy	○○○○

Key: ○ = 4 children

- (i) How many children said Comedy?

..... [1]

- (ii) 9 children said they liked Horror best.

Complete the pictogram.

[1]

- (iii) Which type of book was most popular?

..... [1]

- (iv) One of the children is chosen at random.

Find the probability that they liked History best.

..... [1]



- (b) The same 50 children were each asked how many books they had read in the past month. The results are shown in the table.

Number of books	1	2	3	4	5	6
Frequency	7	14	12	5	8	4

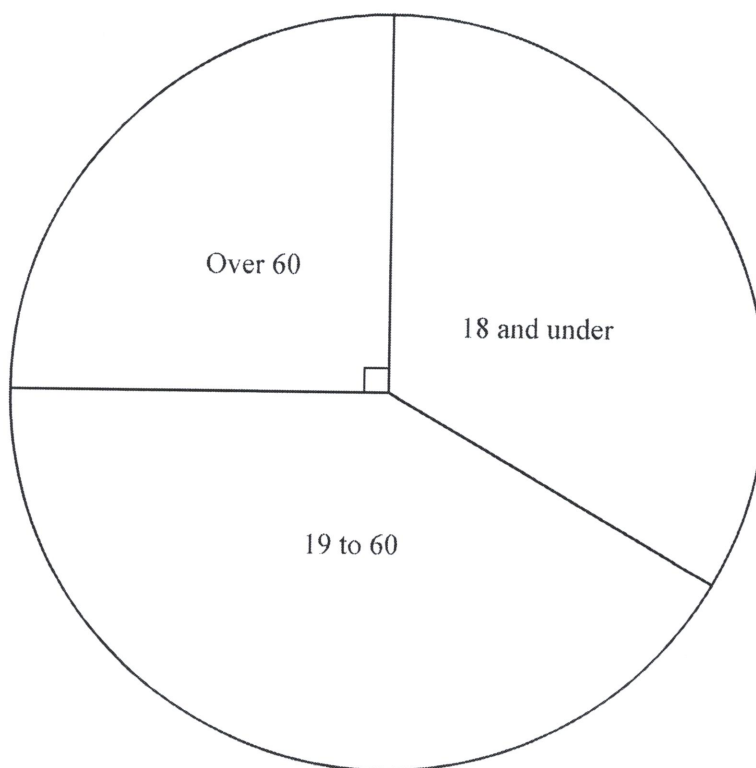
- (i) Find the median.

..... [2]

- (ii) Calculate the mean.

..... [3]

- (c) The ages of 300 people visiting a library one day were recorded. The pie chart shows the results.



- (i) What fraction of the people were aged over 60?

..... [1]

- (ii) How many people were aged 19 to 60?

..... [3]

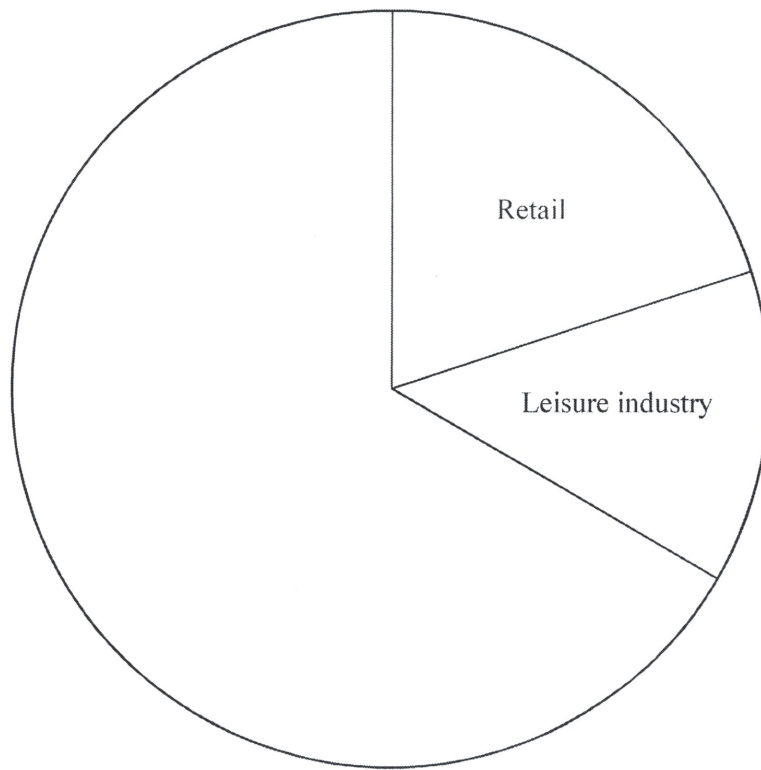
4 The table shows a summary of the types of employment for 90 people.

Employment	Frequency	Pie chart sector angle
Retail	18	$72^\circ$
Leisure industry	12	$48^\circ$
Public service	35	
Other	25	

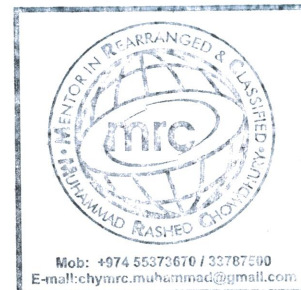
(a) (i) Complete the table.

[2]

(ii) Complete the pie chart and label the sectors.



[2]



5 The table shows how 45 students each travel to college.

Method of travel	Walk	Bus	Cycle
Frequency	20	18	7

This information can be displayed in a pie chart.

(a) Show that the sector angle for students who walk is  $160^\circ$ .

Answer(a)



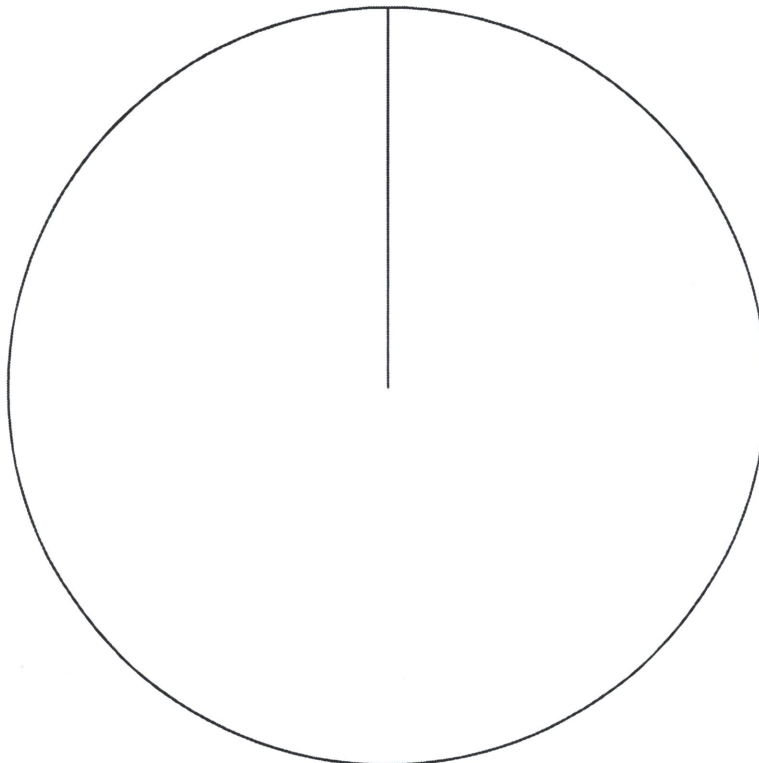
[1]

(b) Calculate the sector angle for students who travel by bus.

Answer(b) .....

[1]

(c) Complete the pie chart and label the sectors.



[2]

6 The number of ice-creams sold in a shop each month is shown in the table.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Number of ice-creams sold	1300	1200	1700	1800	2300	2500	2800	2600	1500	1600	1100	1900

(a) (i) Find the range.

Answer(a)(i) ..... [1]

(ii) Calculate the mean.

Answer(a)(ii) ..... [2]

(iii) Find the median.

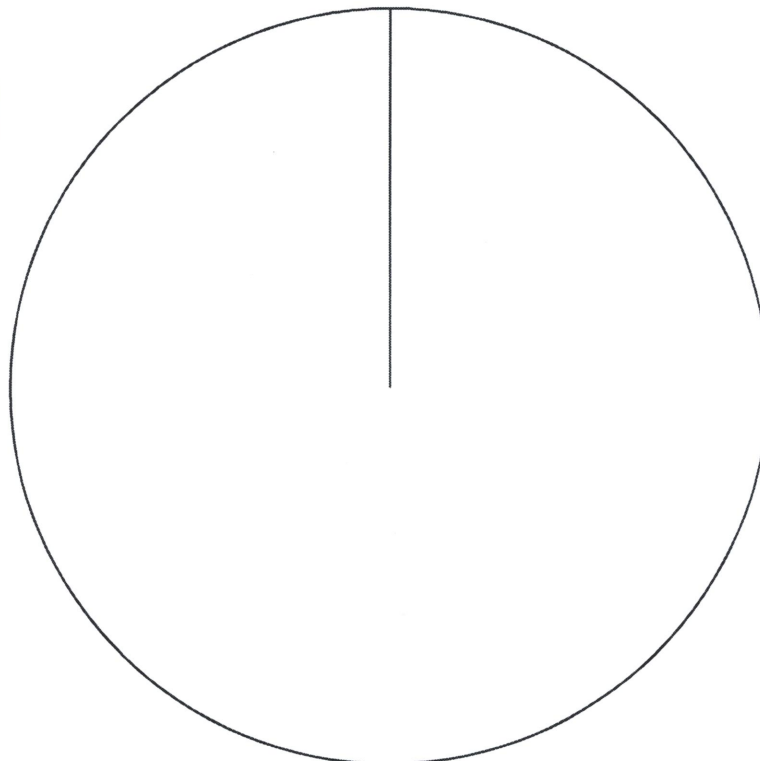
Answer(a)(iii) ..... [2]

(b) The numbers of chocolate, strawberry and vanilla ice-creams sold are shown in the table.

Flavour	Number of ice-creams	Pie chart sector angle
Chocolate	4200	140°
Strawberry	3600	
Vanilla	3000	

(i) Complete the table by working out the sector angles for strawberry and vanilla. [3]

(ii) Complete the pie chart below and label the sectors.



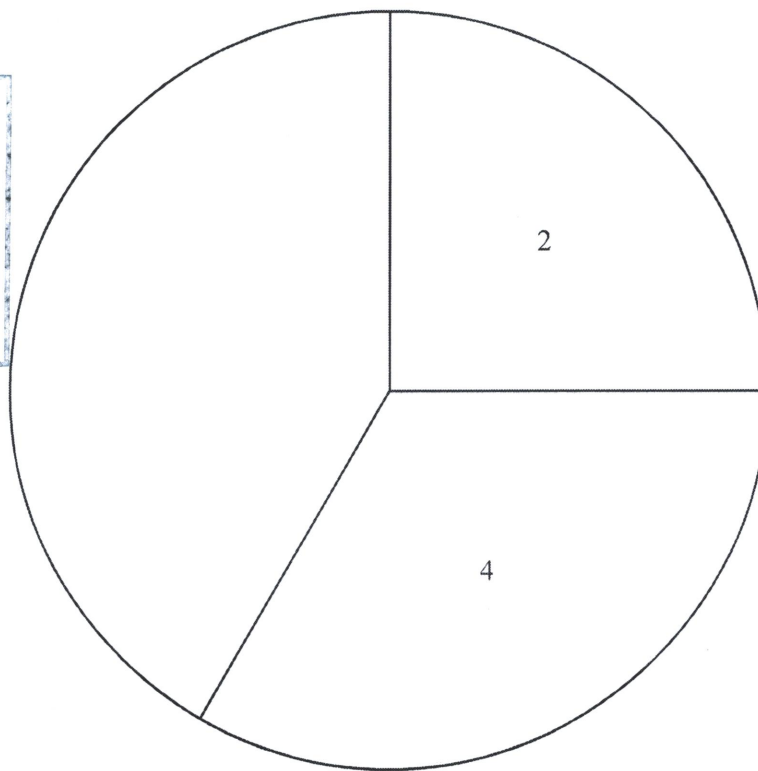
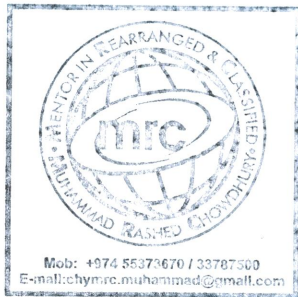
[2]



Felix spins his 12-sided spinner 60 times and records the results.

Number on spinner	Frequency	Pie chart sector angle
2	15	90°
4	20	120°
5	5	30°
7	12	
9	8	

- (i) Complete the table by working out the sector angles for the numbers 7 and 9. [3]
- (ii) Complete the pie chart.



- (iii) Write down the mode. [2]

Answer(d)(iii) ..... [1]

- (iv) Calculate the mean.

Answer(d)(iv) ..... [3]

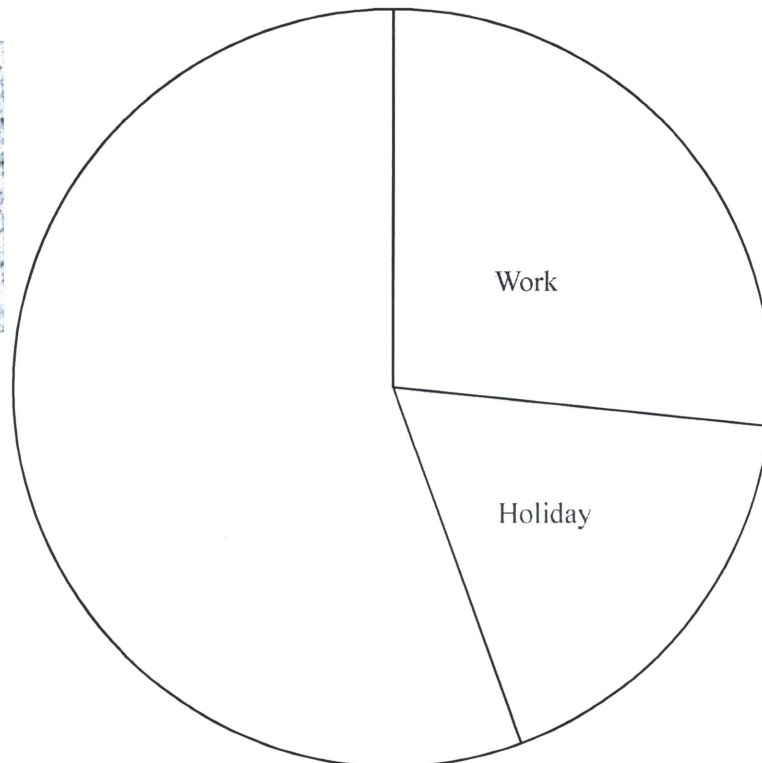
08 One day Raphael asked 90 people at a station the reason for their train journey.

(a) (i) Complete the table which shows the angles for the sectors in a pie chart.

Reason	Frequency	Angle
Work	24	$96^\circ$
Holiday	16	$64^\circ$
Shopping	19	
Other	31	

[2]

(ii) Complete the pie chart to show this information.



[1]

(b) Raphael selects one person at random.

Write down the probability that this person is going to work.  
Give your answer as a fraction in its simplest form.

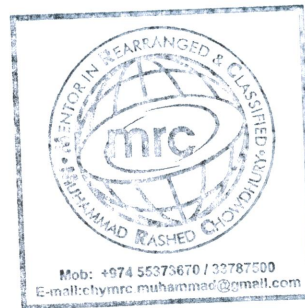
Answer(b) ..... [2]

(c) 405 people used the station that day.

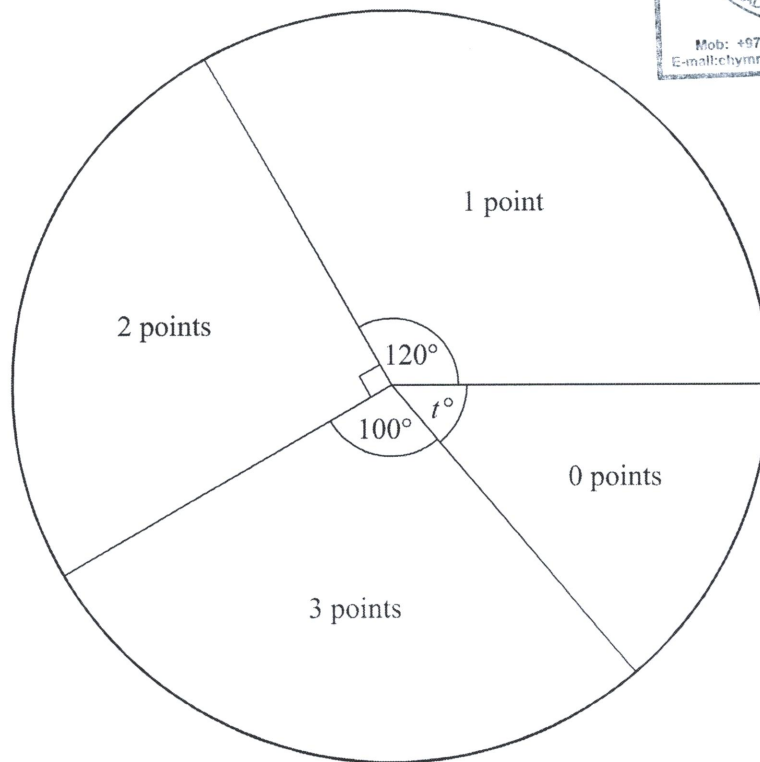
Using Raphael's information, calculate how many of the 405 people are likely to be going on holiday.

Answer(c) ..... [2]

- 09 288 students took part in a quiz.  
There were three questions in the quiz.  
Each correct answer scored 1 point.  
The pie chart shows the results.



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- (a) Find the value of  $t$ .

Answer(a)  $t =$  ..... [1]

- (b) Find the number of students who scored 2 points.

Answer(b) ..... [2]

- (c) Find the modal number of points.

Answer(c) ..... [1]



10 Joel spins a fair five-sided spinner numbered 2, 3, 4, 5 and 6.

(a) Write down the probability that the spinner lands on

(i) an odd number,

..... [1]

(ii) a prime number,

..... [1]

(iii) the number 7.

..... [1]

(b) Here are the results of his first 20 spins.

Number	2	3	4	5	6
Frequency	3	2	6	4	5

(i) Write down the mode.

..... [1]

(ii) Calculate the mean.

..... [3]

(iii) Joel wants to draw a pie chart to show the results in the table.

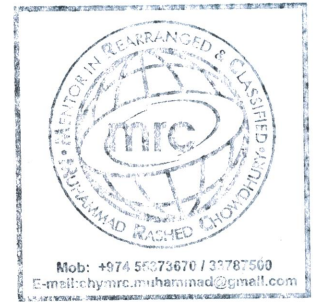
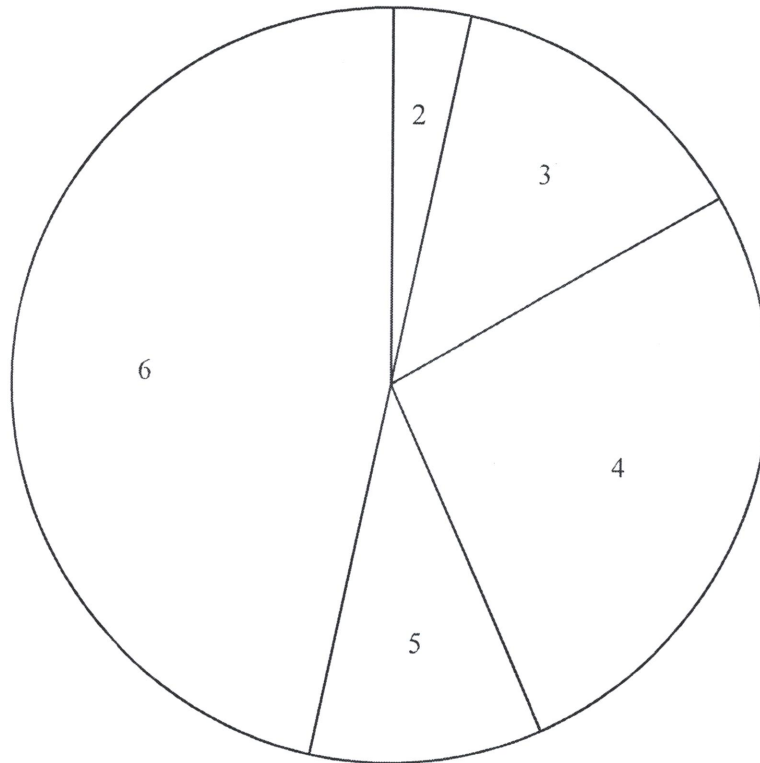
(a) Show that the sector angle for the number 2 is  $54^\circ$ .

[1]

(b) Find the sector angle for the number 6.

..... [2]

- (c) Joel asks 30 students to guess the number that the spinner will next land on. The results are shown in this pie chart.



- (i) The sector angle for the number 6 is  $168^\circ$ .

How many students guessed the number 6?

..... [2]

- (ii) Find the percentage of the students who guessed a number **less than** 5.

.....% [3]

- (iii) Joel spins the spinner.  
10% of the 30 students guessed correctly.

Which number did the spinner land on?

..... [2]

Alison puts her 15 scores into 4 groups and shows them in a pie chart.

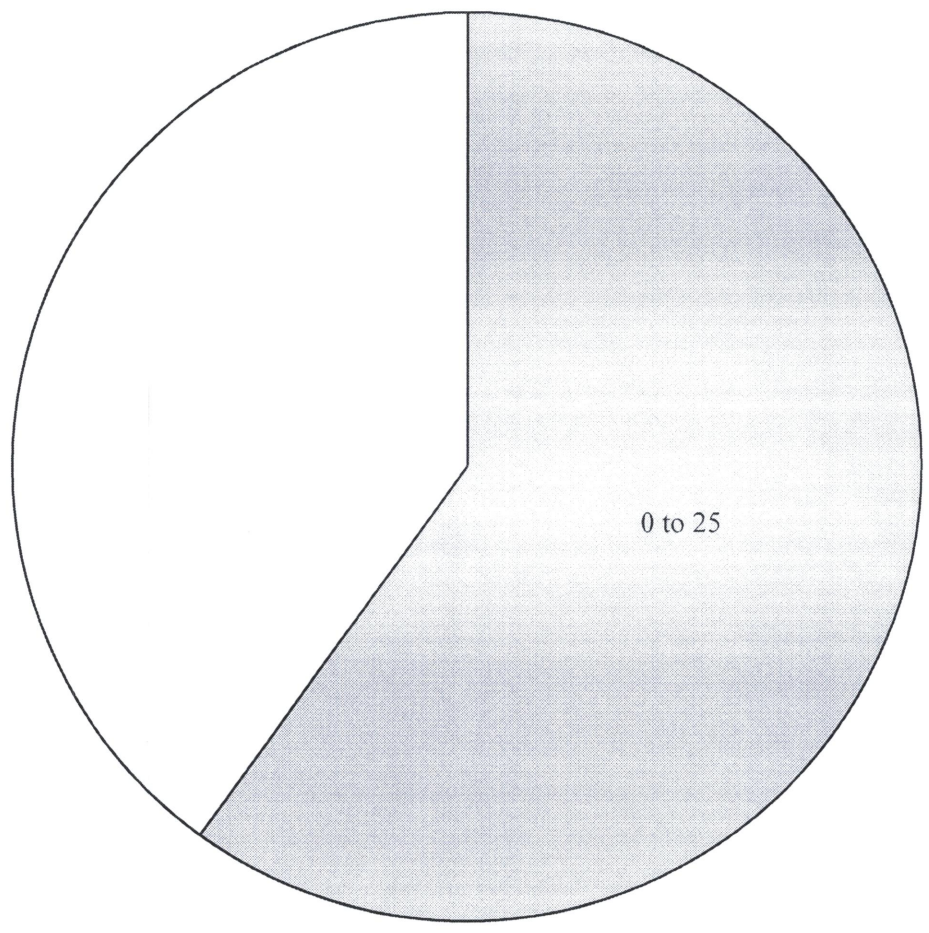
(i) Complete the table.

Score	Frequency	Sector Angle
0 to 25	9	216°
26 to 50		
51 to 75		
76 to 100		



[3]

(ii) Complete the pie chart and label the sectors.



[3]

(d) Estimate the probability that in the next match Alison will score more than 25 runs. Give your answer as a fraction in its simplest form.

Answer(d) ..... [2]

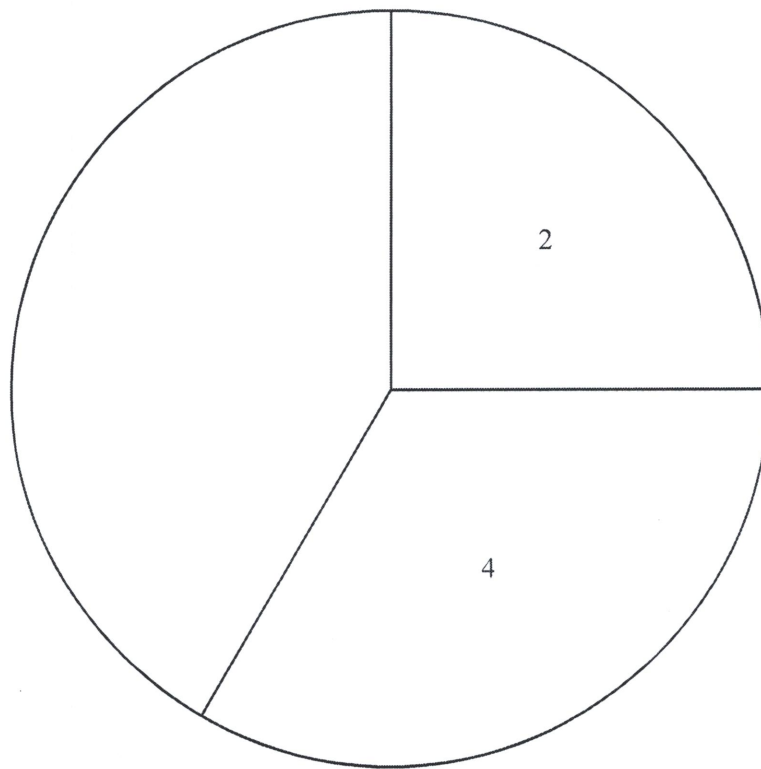
(d) Felix spins his 12-sided spinner 60 times and records the results.

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Number on spinner	Frequency	Pie chart sector angle
2	15	90°
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5	5	30°
7	12	
9	8	

- (i) Complete the table by working out the sector angles for the numbers 7 and 9. [3]
- (ii) Complete the pie chart.



- (iii) Write down the mode. [2]

Answer(d)(iii) ..... [1]

- (iv) Calculate the mean.

Answer(d)(iv) ..... [3]