2.17 Pie Charts: 30-minute Pack

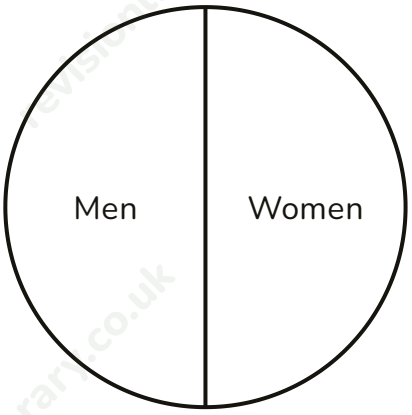
EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 50 customers of a gym were recorded as either Men or Women. The pie chart shows the results.



(a) What fraction of the pie chart represents Women? **(1)**

.....

(b) Work out the number of women in the survey of 50 customers. **(2)**

.....

(Total for Question 1 is 3 marks)

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2 A charity shop sorted 90 donated books into three categories: Fiction, Non-fiction and Children's. In the pie chart of the results, the three categories take up equal thirds of the circle.

(a) Write down the fraction of the books that were Fiction. **(1)**

.....

(b) Work out how many of the books were Children's books. **(2)**

.....

(Total for Question 2 is 3 marks)

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3 50 people were asked how they travel on holiday. The table shows some of the results.

Method of travel	Frequency
Plane	20
Car	15
Train	
Ferry	5
Total	**50**

(a) Work out the number of people who travel by Train. **(2)**

.....

(b) Work out the angle that should be used to represent Train on a pie chart. **(2)**

.....

(c) Work out the angle that should be used to represent Ferry on a pie chart. **(2)**

.....

(Total for Question 3 is 6 marks)

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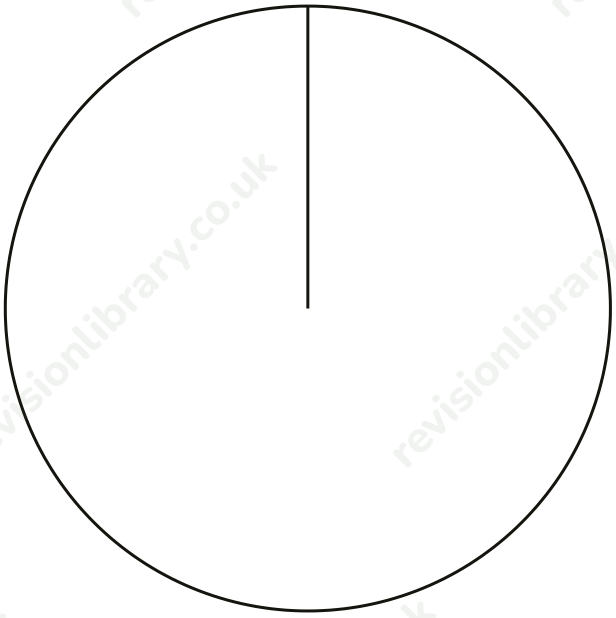
4 A pie chart is to be drawn using percentages. Work out the angle that should be used to represent a sector of 45%.

(Total for Question 4 is 2 marks)

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5 40 employees at a company were asked how many sick days they took last year. The table shows the results.

Sick days taken last year	Frequency
0	10
1	16
2	8
3 or more	6
Total	40



(a) Calculate the angle needed to represent each number of sick days on a pie chart. **(2)**

(b) Using a protractor, draw an accurate pie chart to show this information. Label each sector. **(2)**

(Total for Question 5 is 4 marks)

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6 180 people answered a survey question with Yes, No or Unsure. In a pie chart representing the results, the angles for Yes, No and Unsure are in the ratio 5:3:1.

(a) Work out the angle that represents each answer. **(2)**

.....

(b) Work out the number of people who answered Unsure. **(2)**

.....

(Total for Question 6 is 4 marks)

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7 The pie chart below shows the results of 90 people answering a neighbourhood question. The sector for 'Yes' measures 140 degrees. Show that the number of people who answered 'Yes' is 35. Give the full method.

(Total for Question 7 is 3 marks)

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Mark scheme · 2.17 Pie Charts: 30-minute Pack

Question 1

(a) 1/2 oe (0.5, 50%) **B1**

(a) Answer: 1/2

(b) 50 / 2 oe **M1**

(b) 25 cao **A1**

(b) Answer: 25

Question 2

(a) 1/3 oe **B1**

(a) Answer: 1/3

(b) 90 / 3 oe **M1**

(b) 30 cao **A1**

(b) Answer: 30

Question 3

(a) 50 - 20 - 15 - 5 oe **M1**

(a) 10 cao **A1**

(a) Answer: 10

(b) 10/50 x 360 oe (ft their answer to (a)) **M1**

(b) 72 (degrees) cao **A1**

(b) Answer: 72 degrees

(c) 5/50 x 360 oe **M1**

(c) 36 (degrees) cao **A1**

(c) Answer: 36 degrees

Question 4

0.45 x 360 oe **M1**

162 (degrees) cao **A1**

Answer: 162 degrees

Question 5

(a) at least one correct method shown, e.g. 10/40 x 360 **M1**

(a) all four angles correct: 0 sick days 90, 1 sick day 144, 2 sick days 72, 3 or more 54 **A1**

(a) Answer: 0 sick days 90 degrees, 1 sick day 144 degrees, 2 sick days 72 degrees, 3 or more sick days 54 degrees

(b) ft all four sectors drawn with angles matching candidate's answer to (a), within ± 2 degrees **B1**

(b) all four sectors correctly labelled with number of sick days **B1**

(b) Answer: Pie chart with sectors of 90, 144, 72 and 54 degrees, labelled 0 sick days, 1 sick day, 2 sick days and 3 or more sick days.

Question 6

(a) 360 / 9 oe (finding the value of 1 share) **M1**

(a) Yes 200, No 120, Unsure 40, all correct **A1**

(a) Answer: Yes 200 degrees, No 120 degrees, Unsure 40 degrees

(b) 1/9 x 180 oe, or 40/360 x 180 oe (ft their answer to (a)) **M1**

(b) 20 cao **A1**

(b) Answer: 20

Question 7

use method: 140/360 * 90 or equivalent **M1**

calculate 140/360 * 90 = 35 oe **M1**

35 cao **A1**

Answer: 35 (because 140/360 × 90 = 35).

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