FOUNDATION

2.17 Pie Charts: 1-hour Pack

EDEXCEL 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A pie chart is divided into 6 equal sectors, each showing a different flavour of ice cream sold at a summer fair. What is the angle of each sector?

- ☐ A) 45 degrees
- ☐ B) 60 degrees
- ☐ C) 72 degrees
- ☐ D) 90 degrees

(Total for Question 1 is 1 mark)

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2 A pie chart shows the results of a survey of 35 members of a book club about their favourite genre. The 'Mystery' sector represents 20% of the members.

(a) Write down 20% as a fraction in its simplest form. **(1)**

.....

(b) Work out the number of members whose favourite genre is Mystery. **(2)**

.....

(Total for Question 2 is 3 marks)

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3 In a pie chart showing pupils' favourite sport, the sector for Cricket has an angle of 45 degrees. The total number of pupils surveyed is 96. Work out the number of pupils who chose Cricket.

(Total for Question 3 is 2 marks)

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4 A pie chart shows the favourite pizza topping of 72 people. The sector for Pepperoni has an angle of 150 degrees. Work out the number of people who chose Pepperoni.

(Total for Question 4 is 2 marks)

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5 180 students were asked how they travel to school. Results: Walk 20, Bus 31, Car 22, Cycle 107. Work out the angle for Bus on a pie chart.

(Total for Question 5 is 2 marks)

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6 A pie chart shows how 60 people chose their favourite drink. The sector for tea has angle 66 degrees. Work out how many people chose tea.

(Total for Question 6 is 2 marks)

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7 A survey of 40 people gave these frequencies: 3, 10, 10, 17 for four types of film. Work out the angles for all four sectors of a pie chart and check that they add up to 360 degrees.

(Total for Question 7 is 4 marks)

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8 120 students were asked how they travel to school. Results: Walk 16, Bus 3, Car 27, Cycle 74. Work out the angle for Walk on a pie chart.

(Total for Question 8 is 2 marks)

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9 A pie chart shows how 40 people chose their favourite drink. The sector for tea has angle 126 degrees. Work out how many people chose tea.

(Total for Question 9 is 2 marks)

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10 A survey of 36 people gave these frequencies: 5, 7, 7, 17 for four types of film. Work out the angles for all four sectors of a pie chart and check that they add up to 360 degrees.

(Total for Question 10 is 4 marks)

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11 72 students were asked how they travel to school. Results: Walk 16, Bus 16, Car 17, Cycle 23. Work out the angle for Car on a pie chart.

(Total for Question 11 is 2 marks)

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12 A survey of 72 people gave these frequencies: 5, 8, 5, 54 for four types of film. Work out the angles for all four sectors of a pie chart and check that they add up to 360 degrees.

(Total for Question 12 is 4 marks)

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13 40 students were asked how they travel to school. Results: Walk 7, Bus 5, Car 6, Cycle 22. Work out the angle for Cycle on a pie chart.

(Total for Question 13 is 2 marks)

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14 30 pupils were asked to choose their favourite colour of school jumper. The table shows some of the results.

Favourite jumper colour (30 pupils)

Colour	Frequency
Red	9
Blue	15
Green	6
Total	**30**

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

.....

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

.....

(c) Use your answers to parts (a) and (b), or otherwise, work out the angle that should be used to represent Red on the pie chart. **(2)**

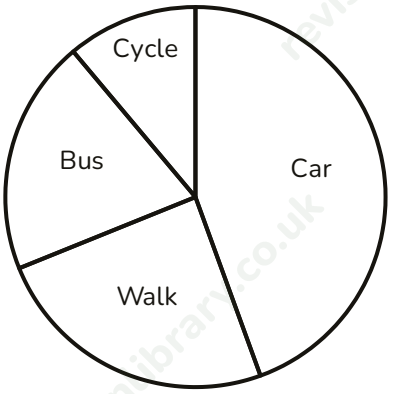
.....

(Total for Question 14 is 6 marks)

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15 45 people were asked how they usually travel to work. The pie chart shows the results.

Travel to work (45 people)



(a) Work out the number of people who travel to work by Car. **(2)**

.....

(b) Work out the number of people who Cycle to work. **(2)**

.....

(c) Work out the percentage of people who travel to work by Bus. **(2)**

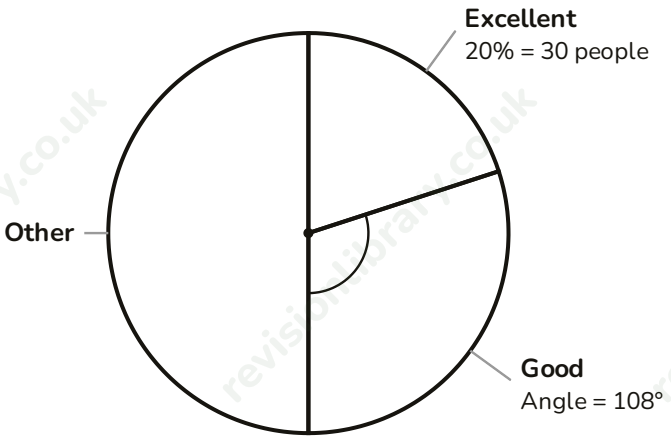
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(Total for Question 15 is 6 marks)

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16 In a pie chart showing customer ratings for a restaurant, the sector for 'Excellent' represents 20% of the people questioned and corresponds to 30 people.

Restaurant Customer Ratings



(a) Work out the total number of people questioned. **(2)**

.....

(b) The sector for 'Good' has an angle of 108 degrees. Work out the number of people who rated the service as 'Good'. **(2)**

.....

(Total for Question 16 is 4 marks)

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Mark scheme · 2.17 Pie Charts: 1-hour Pack

Question 1

B (60 degrees) cao **B1**

Answer: B) 60 degrees

Question 2

(a) 1/5 oe (accept 20/100 unsimplified) **B1**

(a) Answer: 1/5

(b) 35 x 0.2 oe **M1**

(b) 7 cao **A1**

(b) Answer: 7

Question 3

45/360 x 96 oe **M1**

12 cao **A1**

Answer: 12

Question 4

150/360 x 72 oe **M1**

30 cao **A1**

Answer: 30

Question 5

360 / 180 or 31/180 x 360 **M1**

62 degrees cao **A1**

Answer: 62 degrees

Question 6

66 / 360 x 60 or 60 / 360 = 0.166666666666 per degree **M1**

11 cao **A1**

Answer: 11

Question 7

360 / 40 = 9 **M1**

at least two angles correct **A1**

27, 90, 90, 153 cao **A1**

total 360 shown **B1**

Answer: 27, 90, 90, 153 degrees

Question 8

360 / 120 or 16/120 x 360 **M1**

48 degrees cao **A1**

Answer: 48 degrees

Question 9

126 / 360 x 40 or 40 / 360 = 0.111111111111 per degree **M1**

14 cao **A1**

Answer: 14

Question 10

360 / 36 = 10 **M1**

at least two angles correct **A1**

50, 70, 70, 170 cao **A1**

total 360 shown **B1**

Answer: 50, 70, 70, 170 degrees

Question 11

360 / 72 or 17/72 x 360 **M1**

85 degrees cao **A1**

Answer: 85 degrees

Question 12

360 / 72 = 5 **M1**

at least two angles correct **A1**

25, 40, 25, 270 cao **A1**

total 360 shown **B1**

Answer: 25, 40, 25, 270 degrees

Question 13

360 / 40 or 22/40 x 360 **M1**

198 degrees cao **A1**

Answer: 198 degrees

Question 14

(a) 15/30 x 360 oe **M1**

(a) 180 (degrees) cao **A1**

(a) Answer: 180 degrees

(b) 6/30 x 360 oe **M1**

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

(b) Answer: 72 degrees

(c) 360 - 180 - 72 oe, or 9/30 x 360 oe **M1**

(c) 108 (degrees) cao **A1**

(c) Answer: 108 degrees

Question 15

(a) 160/360 x 45 oe **M1**

(a) 20 cao **A1**

(a) Answer: 20

(b) 40/360 x 45 oe **M1**

(b) 5 cao **A1**

(b) Answer: 5

(c) 72/360 x 100 oe **M1**

(c) 20% cao **A1**

(c) Answer: 20%

Question 16

(a) 30 / 0.2 oe **M1**

(a) 150 cao **A1**

(a) Answer: 150

(b) 108/360 x 150 oe (ft their answer to (a)) **M1**

(b) 45 cao **A1**

(b) Answer: 45

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