2.13 Pie Charts: 1-hour Pack

EDEXCEL 1ST0 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

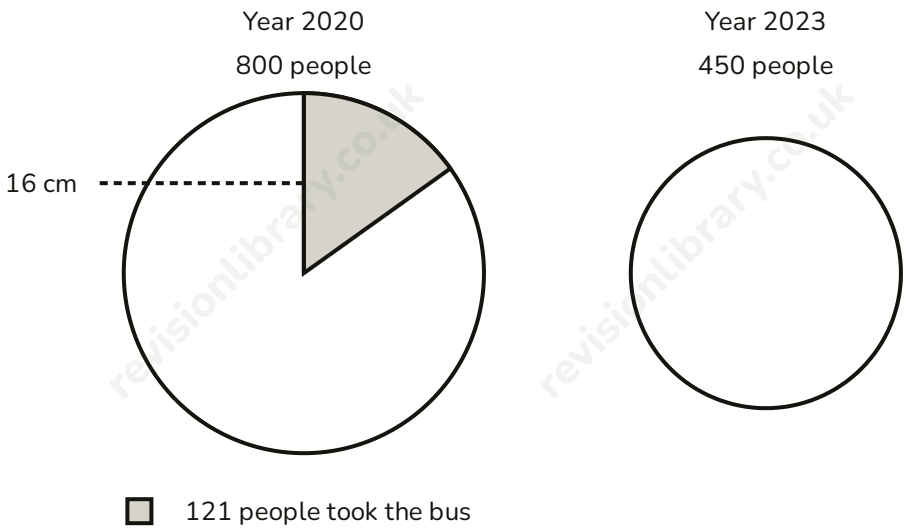
Answer ALL questions. Show all your working.

1 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Year 2020: 800 people in total; the radius of its chart is 16 cm. Year 2023: 450 people in total.

(a) Work out the radius of the chart for Year 2023.

(b) In Year 2020, 121 people took the bus. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 1 is 4 marks)

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2 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 384 people in total; the radius of its chart is 16 cm. School Y: 216 people in total.

(a) Work out the radius of the chart for School Y.

(b) In School X, 92 people walked. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 2 is 4 marks)

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3 A pie chart shows types of film chosen at a cinema. The angles of the sectors are in the table.

Choice	Angle
action	36 degrees
cartoon	48 degrees
horror	126 degrees
drama	150 degrees

8 people chose cartoon.

(a) Work out how many people were asked altogether.

(b) Work out how many people chose horror.

(Total for Question 3 is 4 marks)

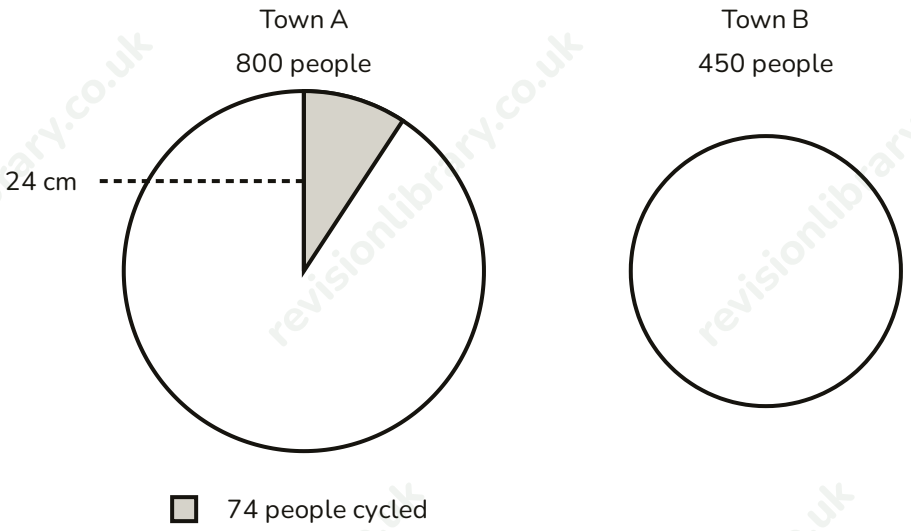
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4 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Town A: 800 people in total; the radius of its chart is 24 cm. Town B: 450 people in total.

(a) Work out the radius of the chart for Town B.

(b) In Town A, 74 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 4 is 4 marks)

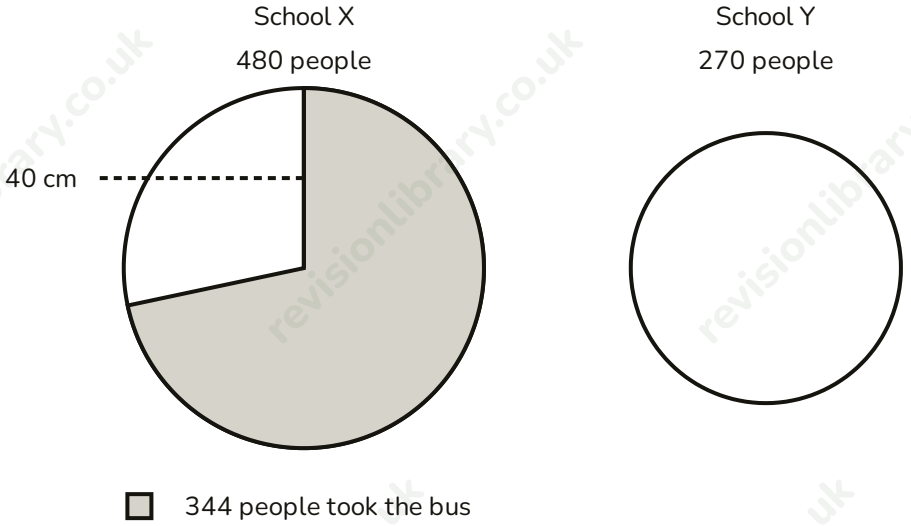
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5 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 480 people in total; the radius of its chart is 40 cm. School Y: 270 people in total.

(a) Work out the radius of the chart for School Y.

(b) In School X, 344 people took the bus. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 5 is 4 marks)

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6 90 people were asked about types of film chosen at a cinema. The results are in the table.

Choice	Frequency
horror	19
drama	20
cartoon	5
action	46

A pie chart is to be drawn. Work out the angle for each choice. Show that the angles add up to 360 degrees.

(Total for Question 6 is 4 marks)

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7 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Year 2020: 1000 people in total; the radius of its chart is 25 cm. Year 2023: 160 people in total.

(a) Work out the radius of the chart for Year 2023.

(b) In Year 2020, 469 people walked. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 7 is 4 marks)

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8 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Town A: 405 people in total; the radius of its chart is 12 cm. Town B: 45 people in total.

(a) Work out the radius of the chart for Town B.

(b) In Town A, 21 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 8 is 4 marks)

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9 A pie chart shows how a company's staff spend lunch breaks. The angles of the sectors are in the table.

Choice	Angle
canteen	110 degrees
shops	34 degrees
outside	46 degrees
gym	170 degrees

23 people chose outside.

(a) Work out how many people were asked altogether.

(b) Work out how many people chose gym.

(Total for Question 9 is 4 marks)

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10 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 1250 people in total; the radius of its chart is 20 cm. School Y: 200 people in total.

(a) Work out the radius of the chart for School Y.

(b) In School X, 725 people took the bus. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 10 is 4 marks)

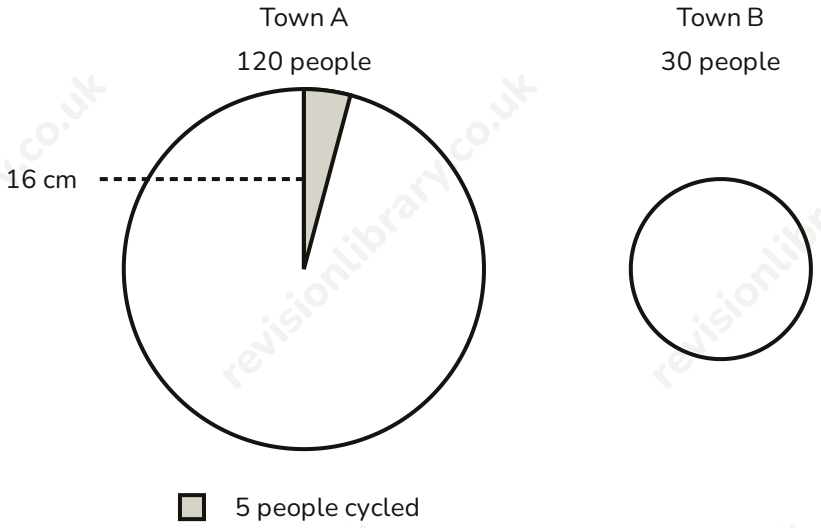
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11 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Town A: 120 people in total; the radius of its chart is 16 cm. Town B: 30 people in total.

(a) Work out the radius of the chart for Town B.

(b) In Town A, 5 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 11 is 4 marks)

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12 In a pie chart about favourite sports of club members, the sector for netball has an angle of 159 degrees and 53 people chose netball. The sector for football has an angle of 60 degrees.
(a) Write the netball sector as a percentage of the whole.
(b) How many people chose football?

(Total for Question 12 is 4 marks)

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13 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Town A: 384 people in total; the radius of its chart is 40 cm. Town B: 216 people in total.
(a) Work out the radius of the chart for Town B.
(b) In Town A, 361 people walked. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 13 is 4 marks)

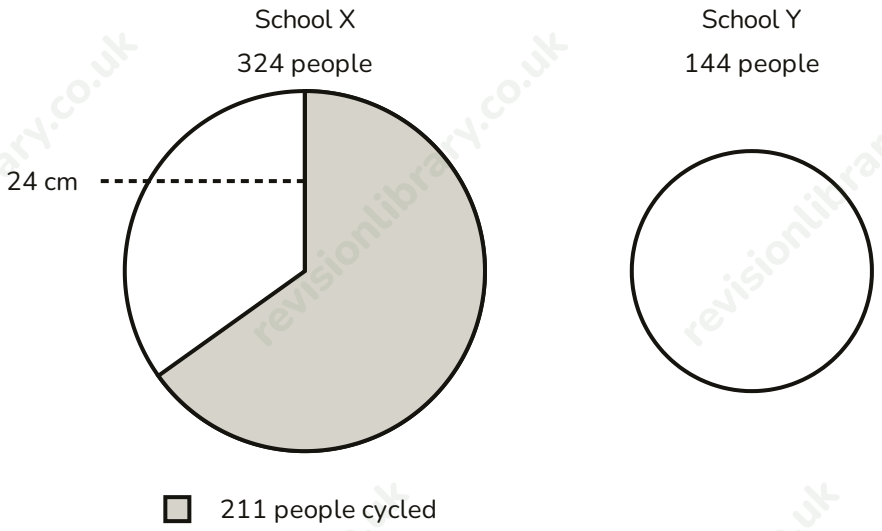
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14 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 324 people in total; the radius of its chart is 24 cm. School Y: 144 people in total.

(a) Work out the radius of the chart for School Y.

(b) In School X, 211 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 14 is 4 marks)

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15 125 shoppers were surveyed about their payment method. The pie chart shows that 40% of shoppers chose Cash. Work out the angle representing Cash.

(Total for Question 15 is 2 marks)

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Mark scheme · 2.13 Pie Charts: 1-hour Pack

Question 1

radius ratio equals square root of ratio of totals: $\sqrt{450/800}$	**M1**
12 cm cao	**A1**
121/800 x 360	**M1**
54.5 degrees cao	**A1**

Answer: (a) 12 cm; (b) 54.5 degrees

Question 2

radius ratio equals square root of ratio of totals: $\sqrt{216/384}$	**M1**
12 cm cao	**A1**
92/384 x 360	**M1**
86.3 degrees cao	**A1**

Answer: (a) 12 cm; (b) 86.3 degrees

Question 3

8 / 48 or 360 / 48 x 8	**M1**
60 cao	**A1**
126 x 60 / 360	**M1**
21 cao	**A1**

Answer: (a) 60; (b) 21

Question 4

radius ratio equals square root of ratio of totals: $\sqrt{450/800}$	**M1**
18 cm cao	**A1**
74/800 x 360	**M1**
33.3 degrees cao	**A1**

Answer: (a) 18 cm; (b) 33.3 degrees

Question 5

radius ratio equals square root of ratio of totals: $\sqrt{270/480}$	**M1**
30 cm cao	**A1**
344/480 x 360	**M1**
258 degrees cao	**A1**

Answer: (a) 30 cm; (b) 258 degrees

Question 6

360 / 90 = 4 degrees per person	**M1**
at least 3 angles correct	**A1**
all angles 76, 80, 20, 184 cao	**A1**
angles sum to 360	**B1**

Answer: 76, 80, 20, 184

Question 7

radius ratio equals square root of ratio of totals: $\sqrt{160/1000}$	**M1**
10 cm cao	**A1**
469/1000 x 360	**M1**
168.8 degrees cao	**A1**

Answer: (a) 10 cm; (b) 168.8 degrees

Question 8

radius ratio equals square root of ratio of totals: $\sqrt{45/405}$	**M1**
4 cm cao	**A1**
21/405 x 360	**M1**
18.7 degrees cao	**A1**

Answer: (a) 4 cm; (b) 18.7 degrees

Question 9

23 / 46 or 360 / 46 x 23	**M1**
180 cao	**A1**
170 x 180 / 360	**M1**
85 cao	**A1**

Answer: (a) 180; (b) 85

Question 10

radius ratio equals square root of ratio of totals: $\sqrt{200/1250}$	**M1**
8 cm cao	**A1**
725/1250 x 360	**M1**
208.8 degrees cao	**A1**

Answer: (a) 8 cm; (b) 208.8 degrees

Question 11

radius ratio equals square root of ratio of totals: $\sqrt{30/120}$	**M1**
8 cm cao	**A1**
5/120 x 360	**M1**
15 degrees cao	**A1**

Answer: (a) 8 cm; (b) 15 degrees

Question 12

159 / 360 x 100	**M1**
44.2%	**A1**
60 / 159 x 53	**M1**
20 cao	**A1**

Answer: (a) 44.2%; (b) 20

Question 13

radius ratio equals square root of ratio of totals: $\sqrt{216/384}$	**M1**
30 cm cao	**A1**
361/384 x 360	**M1**
338.4 degrees cao	**A1**

Answer: (a) 30 cm; (b) 338.4 degrees

Question 14

radius ratio equals square root of ratio of totals: $\sqrt{144/324}$	**M1**
16 cm cao	**A1**
211/324 x 360	**M1**
234.4 degrees cao	**A1**

Answer: (a) 16 cm; (b) 234.4 degrees

Question 15

0.4 x 360, oe	**M1**
144 (degrees) cao	**A1**

Answer: 144 degrees

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