HIGHER

2.6 Comparative and Proportional Pie Charts: 1-hour Pack

Total Marks

EDEXCEL 1ST0 · Calculator allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

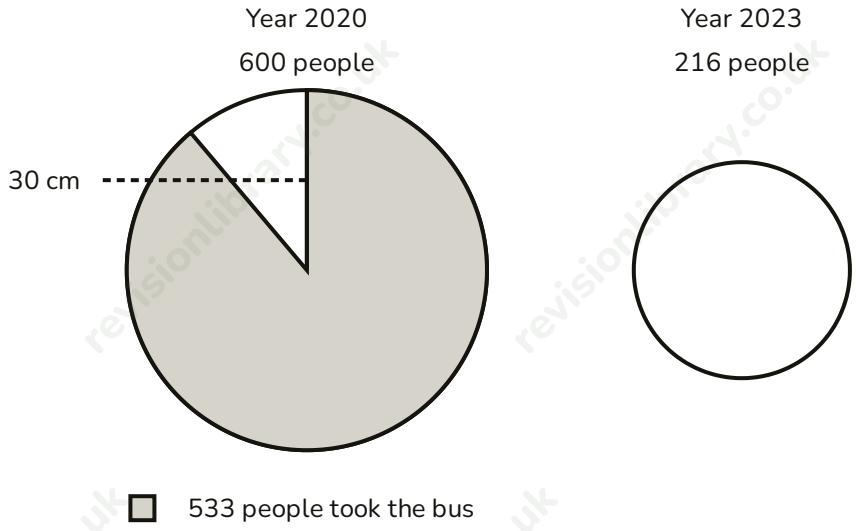
Answer ALL questions. Show all your working.

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: 600 people in total; the radius of its chart is 30 cm. Year 2023: 216 people in total.

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

(b) In Year 2020, 533 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)

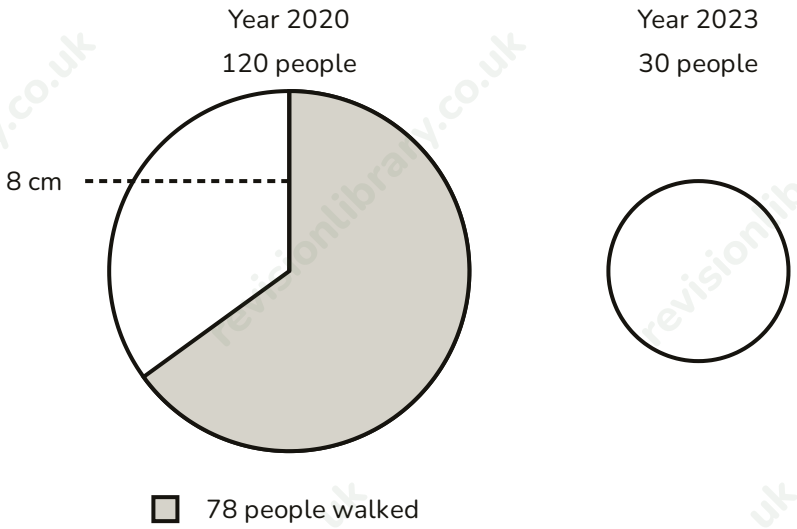
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2 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Year 2020: 120 people in total; the radius of its chart is 8 cm. Year 2023: 30 people in total.

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

(b) In Year 2020, 78 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 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 2000 people in total; the radius of its chart is 30 cm. School Y: 1280 people in total.

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

(b) In School X, 131 people walked. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(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. Year 2020: 144 people in total; the radius of its chart is 16 cm. Year 2023: 36 people in total.

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

(b) In Year 2020, 44 people walked. 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 A pie chart shows how pupils travel to school. The angles of the sectors are in the table.

Choice	Angle
car	171 degrees
cycle	72 degrees
train	45 degrees
bus	72 degrees

8 people chose cycle.

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

(b) Work out how many people chose train.

(Total for Question 5 is 4 marks)

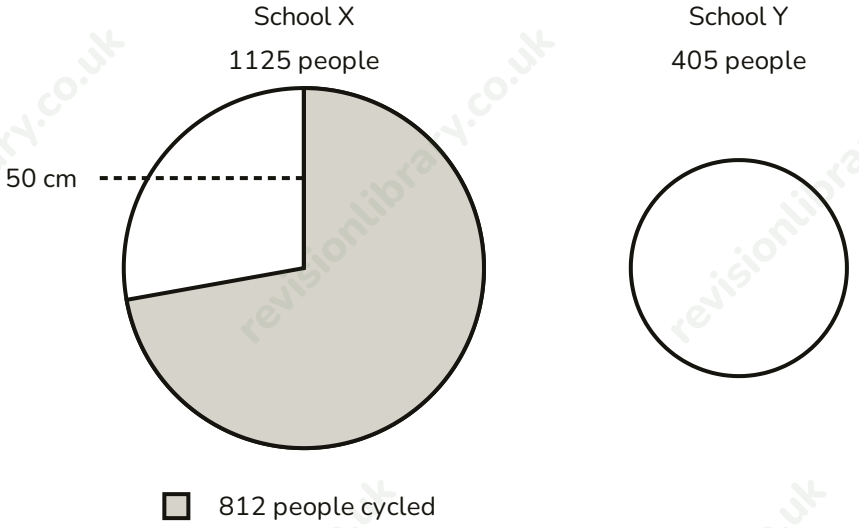
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6 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 1125 people in total; the radius of its chart is 50 cm. School Y: 405 people in total.

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

(b) In School X, 812 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 6 is 4 marks)

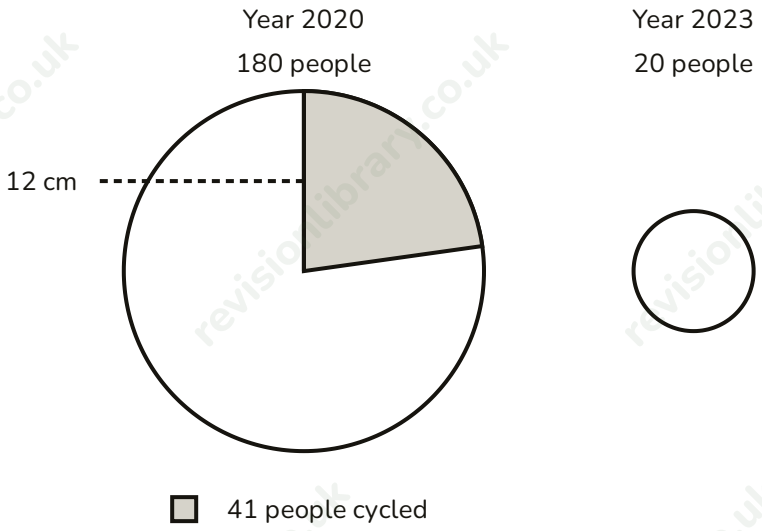
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7 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Year 2020: 180 people in total; the radius of its chart is 12 cm. Year 2023: 20 people in total.

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

(b) In Year 2020, 41 people cycled. 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 A pie chart shows favourite sports of club members. The angles of the sectors are in the table.

Choice	Angle
tennis	60 degrees
netball	60 degrees
football	45 degrees
swimming	105 degrees
rugby	90 degrees

4 people chose netball.

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

(b) Work out how many people chose football.

(Total for Question 8 is 4 marks)

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9 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. School X: 600 people in total; the radius of its chart is 25 cm. School Y: 216 people in total.

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

(b) In School X, 191 people took the bus. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(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. Town A: 240 people in total; the radius of its chart is 16 cm. Town B: 60 people in total.

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

(b) In Town A, 198 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 A pie chart shows pets owned by families. The angles of the sectors are in the table.

Choice	Angle
rabbit	93 degrees
dog	24 degrees
bird	105 degrees
fish	138 degrees

8 people chose dog.

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

(b) Work out how many people chose bird.

(Total for Question 11 is 4 marks)

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12 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Town A: 576 people in total; the radius of its chart is 32 cm. Town B: 324 people in total.

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

(b) In Town A, 88 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(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: 2000 people in total; the radius of its chart is 50 cm. Town B: 720 people in total.

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

(b) In Town A, 34 people took the bus. 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: 1500 people in total; the radius of its chart is 40 cm. School Y: 240 people in total.

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

(b) In School X, 844 people walked. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 14 is 4 marks)

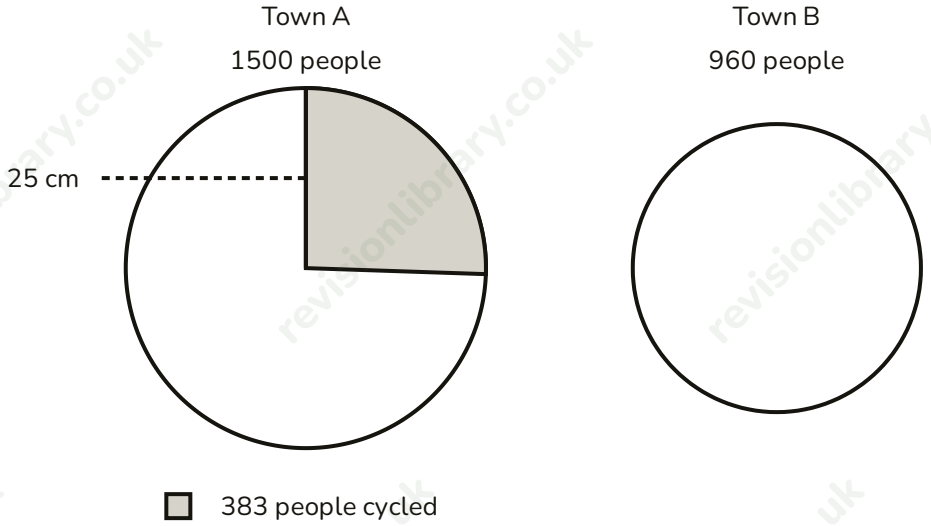
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15 Two proportional pie charts show how people travel. The area of each pie chart is proportional to the total number of people. Town A: 1500 people in total; the radius of its chart is 25 cm. Town B: 960 people in total.

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

(b) In Town A, 383 people cycled. Work out the angle of that sector, to 1 decimal place if needed.

Diagram NOT accurately drawn



(Total for Question 15 is 4 marks)

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Mark scheme · 2.6 Comparative and Proportional Pie Charts: 1-hour Pack

Question 1

radius ratio equals square root of ratio of totals: $\sqrt{216/600}$	**M1**
18 cm cao	**A1**
533/600 x 360	**M1**
319.8 degrees cao	**A1**

Answer: (a) 18 cm; (b) 319.8 degrees

Question 2

radius ratio equals square root of ratio of totals: $\sqrt{30/120}$	**M1**
4 cm cao	**A1**
78/120 x 360	**M1**
234 degrees cao	**A1**

Answer: (a) 4 cm; (b) 234 degrees

Question 3

radius ratio equals square root of ratio of totals: $\sqrt{1280/2000}$	**M1**
24 cm cao	**A1**
131/2000 x 360	**M1**
23.6 degrees cao	**A1**

Answer: (a) 24 cm; (b) 23.6 degrees

Question 4

radius ratio equals square root of ratio of totals: $\sqrt{36/144}$	**M1**
8 cm cao	**A1**
44/144 x 360	**M1**
110 degrees cao	**A1**

Answer: (a) 8 cm; (b) 110 degrees

Question 5

8 / 72 or 360 / 72 x 8	**M1**
40 cao	**A1**
45 x 40 / 360	**M1**
5 cao	**A1**

Answer: (a) 40; (b) 5

Question 6

radius ratio equals square root of ratio of totals: $\sqrt{405/1125}$	**M1**
30 cm cao	**A1**
812/1125 x 360	**M1**
259.8 degrees cao	**A1**

Answer: (a) 30 cm; (b) 259.8 degrees

Question 7

radius ratio equals square root of ratio of totals: $\sqrt{20/180}$	**M1**
4 cm cao	**A1**
41/180 x 360	**M1**
82 degrees cao	**A1**

Answer: (a) 4 cm; (b) 82 degrees

Question 8

4 / 60 or 360 / 60 x 4	**M1**
24 cao	**A1**
45 x 24 / 360	**M1**
3 cao	**A1**

Answer: (a) 24; (b) 3

Question 9

radius ratio equals square root of ratio of totals: $\sqrt{216/600}$	**M1**
15 cm cao	**A1**
191/600 x 360	**M1**
114.6 degrees cao	**A1**

Answer: (a) 15 cm; (b) 114.6 degrees

Question 10

radius ratio equals square root of ratio of totals: $\sqrt{60/240}$	**M1**
8 cm cao	**A1**
198/240 x 360	**M1**
297 degrees cao	**A1**

Answer: (a) 8 cm; (b) 297 degrees

Question 11

8 / 24 or 360 / 24 x 8	**M1**
120 cao	**A1**
105 x 120 / 360	**M1**
35 cao	**A1**

Answer: (a) 120; (b) 35

Question 12

radius ratio equals square root of ratio of totals: $\sqrt{324/576}$	**M1**
24 cm cao	**A1**
88/576 x 360	**M1**
55 degrees cao	**A1**

Answer: (a) 24 cm; (b) 55 degrees

Question 13

radius ratio equals square root of ratio of totals: $\sqrt{720/2000}$	**M1**
30 cm cao	**A1**
34/2000 x 360	**M1**
6.1 degrees cao	**A1**

Answer: (a) 30 cm; (b) 6.1 degrees

Question 14

radius ratio equals square root of ratio of totals: $\sqrt{240/1500}$	**M1**
16 cm cao	**A1**
844/1500 x 360	**M1**
202.6 degrees cao	**A1**

Answer: (a) 16 cm; (b) 202.6 degrees

Question 15

radius ratio equals square root of ratio of totals: $\sqrt{960/1500}$	**M1**
20 cm cao	**A1**
383/1500 x 360	**M1**
91.9 degrees cao	**A1**

Answer: (a) 20 cm; (b) 91.9 degrees

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