

GCSE Maths: Pie charts (Higher): answers

GCSE Maths - Statistics - Higher - Lesson 24.7

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch24-statistics/higher/pie-charts/

Exercise 24G Pie charts Calculator allowed

1 Work out the angle for each sector in a pie chart for each set of data.

- (a) Pets: dog 8, cat 6, fish 4, other 2 (20 pets)

Answer: Dog 144°; Cat 108°; Fish 72°; Other 36°

- (b) Lessons: maths 9, science 6, art 3, PE 6 (24 students)

Answer: Maths 135°; Science 90°; Art 45°; PE 90°

- (c) Fruit: apple 30, pear 20, banana 25, orange 15 (90 pieces)

Answer: Apple 120°; Pear 80°; Banana 100°; Orange 60°

2 The table shows the colours of the cars in a car park.

Colour	Cars
Red	14
Blue	10
Silver	22
Black	14

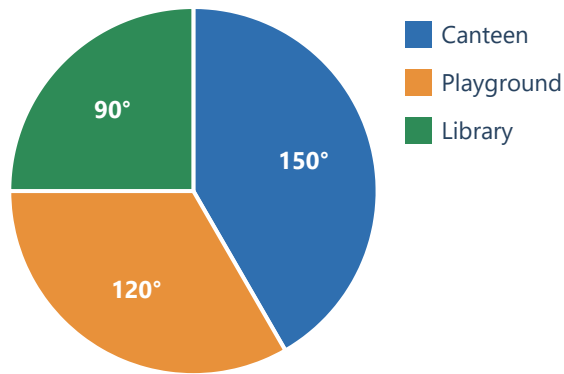
Draw a pie chart to show this information.

Answer: Red 84°; Blue 60°; Silver 132°; Black 84°

3 Twenty-five children voted for their favourite playground game. The results are: tag 6, football 9, skipping 4, hopscotch 6. Work out the angle for each sector, giving your answers to 1 decimal place if necessary.

Answer: Tag 86.4°; Football 129.6°; Skipping 57.6°; Hopscotch 86.4°

4 The pie chart shows how 72 students spend their lunch break. The angle for "canteen" is 150°, for "playground" is 120° and for "library" is 90°. (a) What fraction of the students spend lunch in the canteen? (b) How many students spend lunch in the library? (c) How many students spend lunch in the playground?



- (a) Fraction in the canteen

Answer: $\frac{5}{12}$

- (b) Students in the library

Answer: 18 students

- (c) Students in the playground

Answer: 24 students

5 Each pie chart has a sector with the given angle. Work out the number represented by that sector.

- (a) Total 180 people; sector 60°

Answer: 30

- (b) Total 90 people; sector 140°

Answer: 35

- (c) Total 240 votes; sector 75°

Answer: 50

- (d) Total 54 cars; sector 100°

Answer: 15

6 Work out the total number of items represented by each whole pie chart.

- (a) A sector of 30° represents 5 people.

Answer: 60

- (b) A sector of 80° represents 16 students.

Answer: 72

- (c) A sector of 45° represents 10 votes.

Answer: 80

7 A pie chart has sectors of 90° , 120° , 100° and one other sector. The total number of people is 72. (a) Work out the angle of the missing sector. (b) How many people does the missing sector represent?

- (a) Missing angle

Answer: 50°

(b) People in the missing sector

Answer: 10 people

8 In a pie chart, a sector has angle 54° . What percentage of the data does it represent?

Answer: 15%

9 Two pie charts show how students in Year 9 and in Year 11 travel to school. In Year 9 (120 students) the sector for "bus" is 60° . In Year 11 (180 students) the sector for "bus" is 50° . Which year group has more students travelling by bus?

Answer: Year 11 (25 students compared with 20)

10 Dev says: "A pie chart shows a sector of 90° for football, so 90 people chose football." Explain his mistake.

Answer: The angle is not the number of people. It is a fraction of 360° and depends on the total.

11 Pie chart A has radius 3 cm and shows data for 100 people. Pie chart B shows data for 400 people and the area of each pie chart is in proportion to the number of people. Work out the radius of pie chart B.

Answer: 6 cm

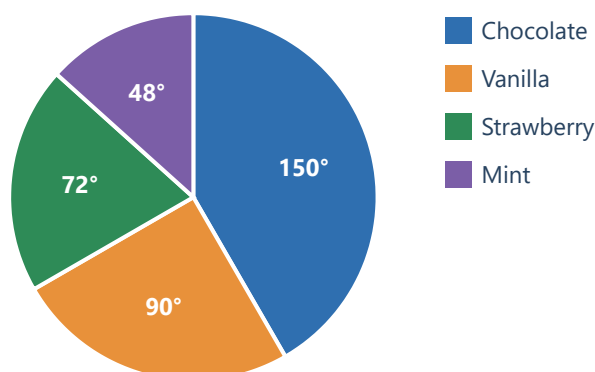
12 The frequency table shows the drinks chosen by 25 people. Work out the angle for each drink, and show that the angles add up to 360° .

Drink	Frequency
Tea	7
Coffee	11
Juice	5
Water	2

Answer: Tea 100.8° ; Coffee 158.4° ; Juice 72° ; Water 28.8°

13 A pie chart shows the favourite ice cream flavours of 60 people. The angles are chocolate 150° , vanilla 90° , strawberry 72° and mint 48° .

(a) How many people chose vanilla? (b) What percentage chose strawberry?



(a) People who chose vanilla

Answer: 15 people

(b) Percentage who chose strawberry

Answer: 20%

14 In two pie charts the sector for “cycling” is 90° in both. The first pie chart shows 80 students and the second shows 120 students. How many more students cycle in the second pie chart than in the first?

Answer: 10