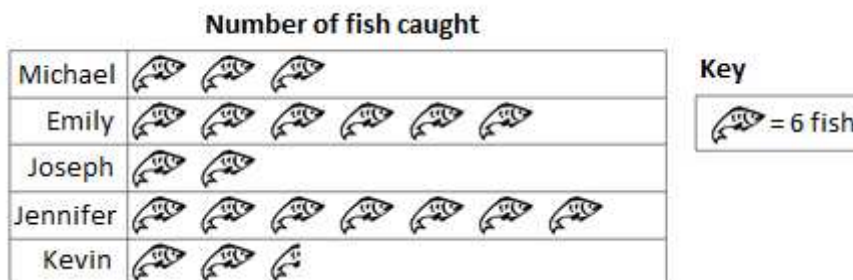## Foundation Check In - 12.02 Interpreting and representing data

1. The pictogram shows the number of fish caught by five friends.
   How many fish did they catch in total?

**Number of fish caught**

| | | Key |
|---|---|---|
| Michael | 🐟 🐟 🐟 | 🐟 = 6 fish |
| Emily | 🐟 🐟 🐟 🐟 🐟 🐟 | |
| Joseph | 🐟 🐟 | |
| Jennifer | 🐟 🐟 🐟 🐟 🐟 🐟 🐟 | |
| Kevin | 🐟 🐟 🐟 | |

2. The pie chart below represents the responses from 120 students asked to choose their favourite sport.
   How many students chose Football?

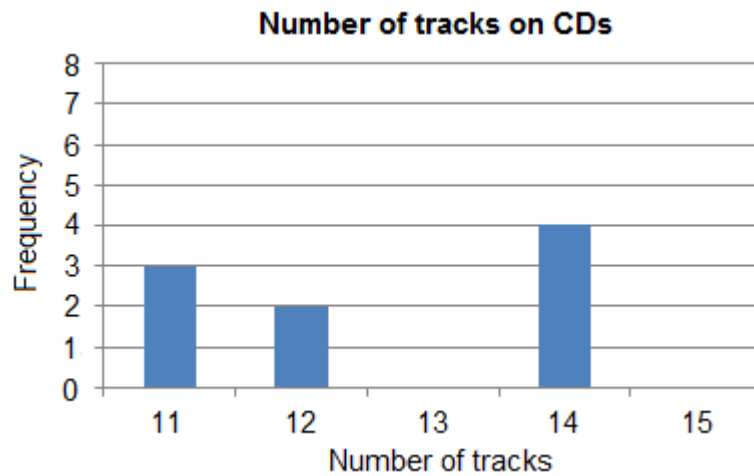

Not to scale

Basketball — 90°
Football
Tennis — 150°
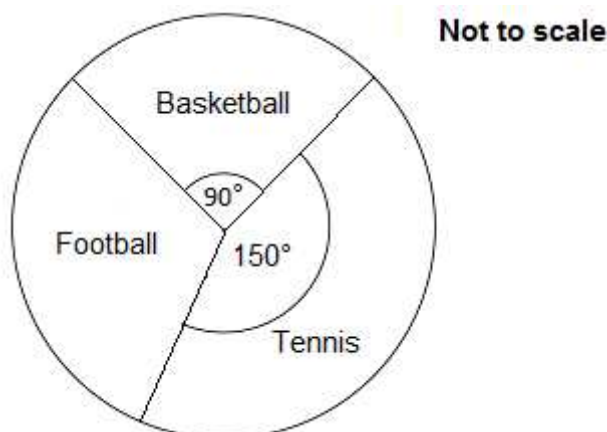
3. How many more students are in Year 8 than in Year 10?
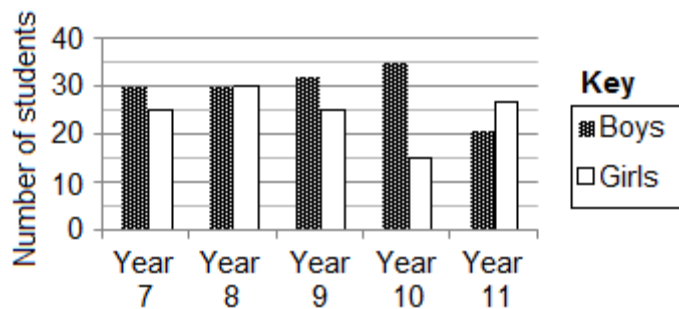


Key
🔷 Boys
⬜ Girls

4. Zaria has 20 music CDs. The frequency table gives some information of the number of tracks on each CD.
   Complete the table and then use this information to complete the bar chart below.

| Number of Tracks | Frequency |
|---|---|
| 11 | 3 |
| 12 | 2 |
| 13 | |
| 14 | 4 |
| 15 | 6 |

**Number of tracks on CDs**



5. The table shows the quarterly sales in a high street shop.

| Year | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|
| 2013 | 25 | 75 | 105 | 45 |
| 2014 | 30 | 85 | 110 | 50 |
| 2015 | 40 | 80 | 115 | |

Use the sales data to complete the graph below.

**Quarterly Sales**



6. Describe any patterns you can see on the completed graph in Question 5.

7. 160 children go on a school trip either to the amusement park or the zoo.
84 children go to the amusement park, of which 38 are boys. 28 girls go to the zoo.
Represent this information in a two-way table.

8. Freda wants to represent the following data in a pie chart.

| Favourite Colour | Frequency |
|---|---|
| Red | 40 |
| Blue | 60 |
| Yellow | 40 |
| Green | 70 |

Show that the angle of the sector representing Green is 120°.

9. The vertical line chart shows the score from rolling a single regular dice 200 times.
Calculate the sum of all 200 scores.
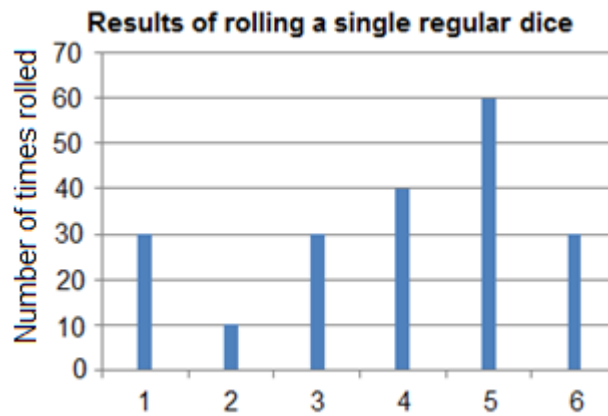


10. The composite bar chart shows the membership of a sports club.
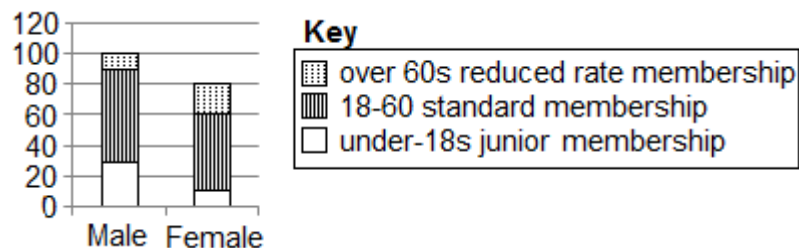


The cost of standard membership is £20.
How much revenue does the club generate from standard memberships?

**Extension**

Carmel asked 100 students how they travelled to school one day. Each student either walked, cycled or came by bus.

46 of the 100 students are boys.
13 of the boys came by bus.
18 girls cycled.
22 of the 38 students who walked are girls.

(a) Work out the total number of students who cycled to school that day.

(b) If a girl is chosen at random, what is the probability that she came by bus that day?

## Answers

1. 123 fish

2. 40 students

3. 10 students

4. 5 CDs have 13 tracks. See graph below.

5. See graph below

6. Possible answers include: repeating pattern each year, maximum quarterly sales in middle of each year, peaks in Quarter 3 and troughs in Quarter 1, gradual increase in quarterly sales over time, etc.

7.

|  | Amusement park | Zoo | Total |
|---|---|---|---|
| **Girls** | 46 | 28 | 74 |
| **Boys** | 38 | 48 | 86 |
| **Total** | 84 | 76 | 160 |

8. Angle for Green $\dfrac{70}{210} \times 360 = 120^{\circ}$

9. 780

10. 110 × £20 = £2200
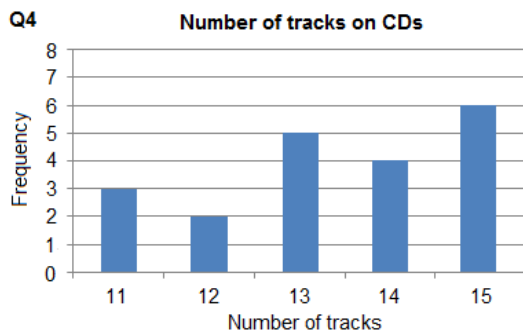




### Extension

(a) 35  (b) $\dfrac{7}{27}$

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| Assessment Objective | Qu. | Topic | R | A | G |
|---|---|---|---|---|---|
| AO1 | 1 | Interpret a pictogram | | | |
| AO1 | 2 | Interpret a pie chart | | | |
| AO1 | 3 | Interpret a multiple bar chart | | | |
| AO1 | 4 | Interpret a frequency table and construct a bar chart | | | |
| AO1 | 5 | Plot a time series graph | | | |
| AO2 | 6 | Identify patterns in a time series graph | | | |
| AO2 | 7 | Design a two-way table | | | |
| AO2 | 8 | Calculate an angle in a pie chart | | | |
| AO3 | 9 | Use graphical data to solve a problem | | | |
| AO3 | 10 | Interpret and use data from a composite bar chart | | | |