Year 6 maths: Pie graphs and line graphs: fractions, percents and change (Hard)

Maths · Data
Level: Hard

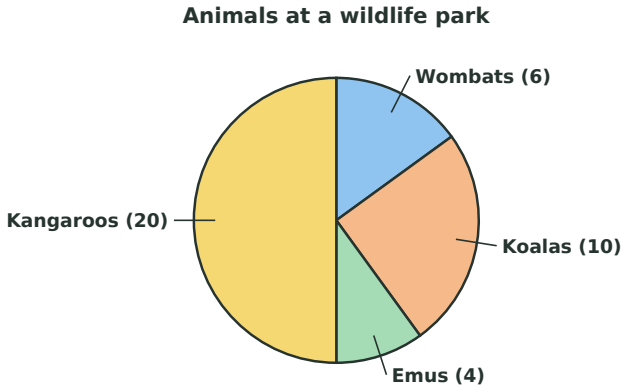
Student: _____ Date: _____

Instructions
- There are 10 questions. Read each one carefully.
- Write your answers on this paper. Use the space under a question to work it out.
- A grown-up can read a question aloud — that's fine.
- The answers are at the end. Check them together when you have finished.

Questions

1. What percent of the animals at the park are koalas?

Answer: ____ %

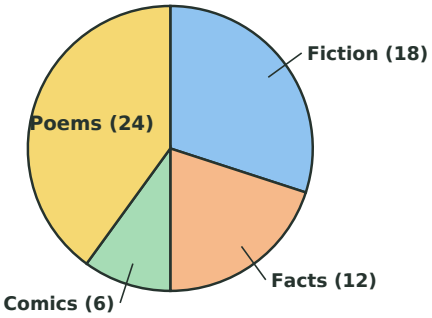


Working:

2. What fraction of the books borrowed were Fiction? Give the fraction in simplest form.

Circle one answer.

Books borrowed in a week

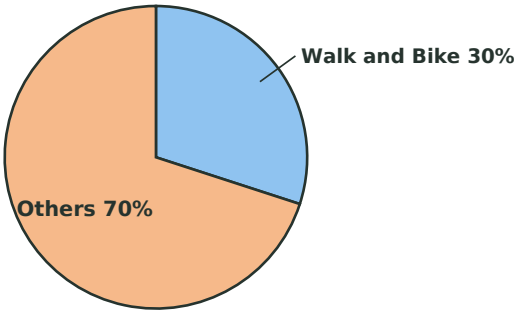


○ **A** 18/42 ○ **B** 3/10 ○ **C** 1/3

3. Walk and Bike together are 30% of the students. That is 45 students. How many students are there altogether?

Answer: ☐ students

Students who walk or ride



Working:

4. Lake PS has 360 students and 25% ride bikes. Creek PS has 120 students and 60% ride bikes. Which school has more students who ride bikes?

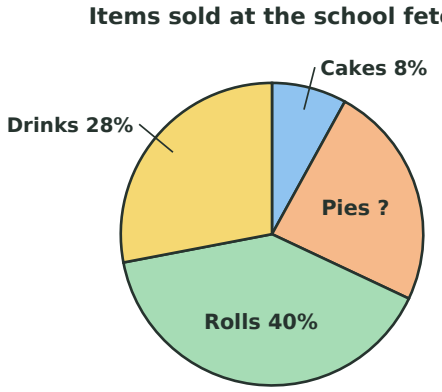
Circle one answer.

○ **A** They have the same number ○ **B** Lake PS

○ **C** Creek PS

5. Pies are three times as many as cakes. Of 500 items sold, how many were pies?

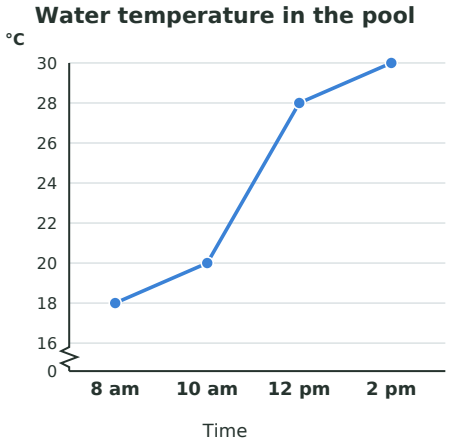
Answer: ____ pies



Working:

6. Assume the line is straight between the dots. What was the water temperature at 11 am, halfway between 10 am and 12 pm?

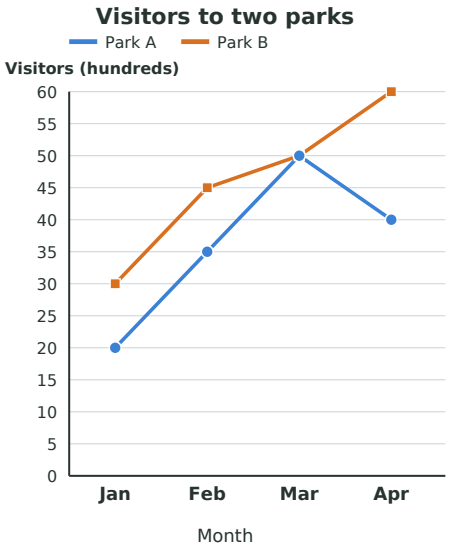
Answer: ____ °C



Working:

7. In which month did both parks have the same number of visitors?

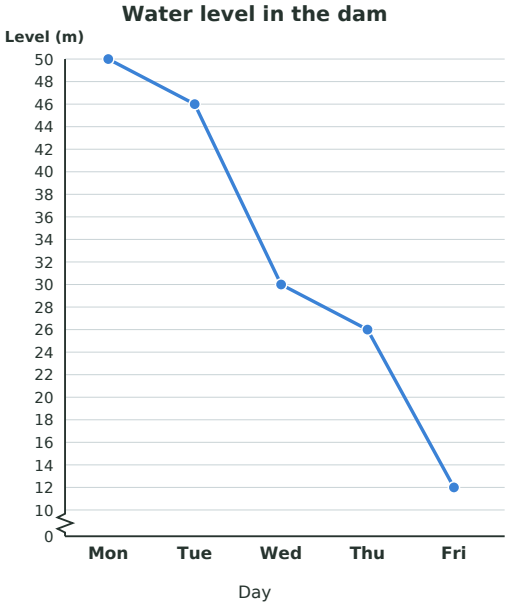
Circle one answer.



○ **A** March ○ **B** February ○ **C** April

8. Between which two days did the water level fall the most?

Circle one answer.



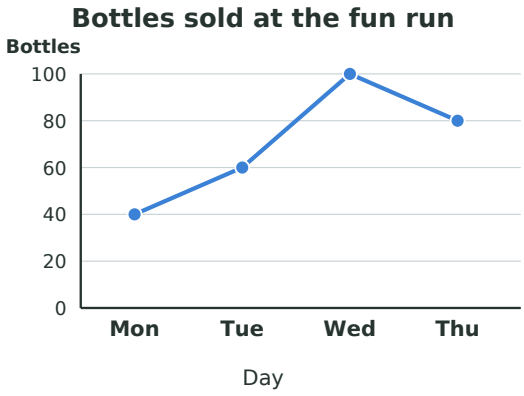
○ **A** Tuesday to Wednesday

○ **B** Thursday to Friday

○ **C** Monday to Tuesday

9. How many bottles were sold altogether on Monday and Thursday?

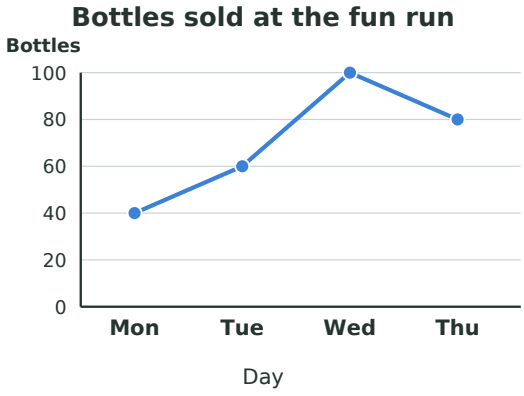
Answer: ☐ bottles



Working:

10. Which statement is supported by the graph of bottles sold?

Circle one answer.



○ **A** Sales will be lower next week.

○ **B** Wednesday had the most sales of the four days.

○ **C** Sales rose every day.

Answer key

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1. 25 %

The sectors add to 6 + 10 + 4 + 20 = 40 animals. 10 of 40 is 1/4, which is 25%.

2. B — 3/10

18 + 12 + 6 + 24 = 60 books. 18/60 = 3/10.

3. 150 students

30% is 3/10 of the group, so 3 equal parts are 45. One part is 45 ÷ 3 = 15. All 10 parts: 10 × 15 = 150.

4. B — Lake PS

Lake PS: 25% of 360 is 90. Creek PS: 60% of 120 is 72.

5. 120 pies

Cakes are 8%, so pies are 3 × 8% = 24%. 10% of 500 is 50: 24% is 2 × 50 + 4 × 5 = 120.

6. 24 °C

At 10 am it was 20 °C and at 12 pm 28 °C. Halfway is 24 °C.

7. A — March

In March both lines meet on the 50 line.

8. A — Tuesday to Wednesday

The falls are 4, 16, 4 and 14. The biggest fall is Tuesday to Wednesday, 46 − 30 = 16.

9. 120 bottles

Monday 40 + Thursday 80 = 120 bottles. The lines go up in 20s.

10. B — Wednesday had the most sales of the four days.

Wednesday is the highest dot (100). Sales fell on Thursday, and the graph says nothing about next week.