

Choose appropriate methods to solve percentage problems



1 Work out these problems.

a) 30% of 40

b) 30 out of 40 as a percentage

c) 30 decreased by 40%

2 A school has 150 students in Year 8

a) 48% of the students are boys. How many boys are there?

b) 27 of the students wear glasses. What percentage of the students wear glasses?

3 a) Mo buys 20 chocolate bars for £8. He sells them all, making a 30% profit.

How much does he sell each bar for?

b) Dani buys 30 bags of sweets for £12. She sells her bags of sweets for 50p each.

Work out Dani's percentage profit.

 %

4 In a spelling test, Alex gets 7 answers out of 25 wrong.

In an arithmetic test, Alex gets 6 answers out of 20 wrong.

a) What percentage of the marks did she get in each test?

spelling %

arithmetic %

b) In which test did she get the better mark? _____

5 a) Circle the cards that simplify to $4a$.

$a \times 4$

$4 + a$

$5a - a$

$a \times a \times a \times a$

$4(a + 0)$

b) What percentage of the cards simplify to $4a$?

 %

6 a) The number of fish in a lake is estimated to be 2,000

After a conservation project, the number of fish in the lake is estimated to have increased by 65%.

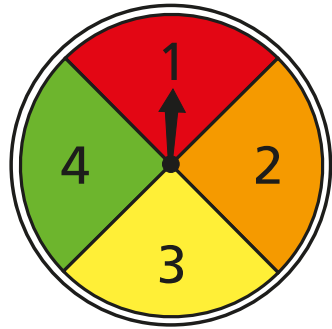
About how many fish are there in the lake now?

b) In another lake there are 5,000 fish.

It is estimated that 2,000 of these fish are carp.

Approximately what percentage of the fish in this lake are carp?

- 7 A four-sided spinner is spun 200 times.



- a) The spinner lands on 1, fifty-six times.
For what percentage of the spins does it land on 1?

 %

- b) 31% of the spins land on 2. How many spins is this?

- c) What is the probability that the spinner lands on 3 or 4? Give your answer as a percentage.

 %

- 8 In a shop, a phone costs £900
The price of the phone is reduced by 20% in a sale.



- a) Work out the sale price of the phone.

£

- b) The shop makes 40% profit on the sale price of the phone.
How much profit does the shop make from the sale of the phone?

£

- 9 In 2008, the population of the UK was 61,823,800
In 2018, the population of the UK was 66,435,600

- a) What was the percentage increase of the UK population between 2008 and 2018?

 %

- b) In 2018, 4.72% of the UK population lived in Wales.
How many people lived in Wales in 2018?

- c) Ron worked out the last calculation on his calculator. He was confused, as the number of people that lived in Wales was not a whole number.
Explain why this might have happened.

- 10 a) Ms Fisher invests £30,000 in a bank account. At the end of the year she receives 1.6% interest.
How much interest does she receive?

- b) Ms Fisher invests £24,000 in another bank account. At the end of the year her investment has grown to £25,500
By what percentage has her investment grown?

