

Proportion problems

Recognise and solve proportion problems



Challenge 1

A factory produces mixed boxes of flavoured crisps. The different flavours are always produced in the same proportions. For every 2 salt and vinegar packets, there are 4 packets of plain crisps, 3 packets of cheese and onion crisps and 1 packet of prawn cocktail crisps.

- a How many packets of salt and vinegar flavour are there if the total number of packets is:
 - i 50?
 - ii 120?
 - iii 700?
 - iv 5000?
- b What is the total number of packets of crisps if there are:
 - i 12 packets of prawn cocktail?
 - ii 12 packets of plain?
 - iii 12 packets of cheese and onion?
 - iv 12 packets of salt and vinegar?



Challenge 2

1 A pizza factory produces 4 different types of pizza. The different flavours are always produced in the same proportions. For every 4 cheese pizzas, there are 5 pepperoni pizzas, 2 mushroom pizzas and 1 chicken pizza.

- a How many cheese pizzas are there if the total number of pizzas is:
 - i 48?
 - ii 120?
 - iii 600?
 - iv 3600?
- b What is the total number of pizzas if there are:
 - i 150 cheese pizzas?
 - ii 150 pepperoni pizzas?
 - iii 150 mushroom pizzas?
 - iv 150 chicken pizzas?



- 2 A warehouse has boxes of beanie hats.
 - a The proportion of blue beanie hats in a box is 3 out of 20. Suggest four sets of numbers of blue and other colour hats that could be in the box.
 - b For each of the total numbers of hats you calculated in a, choose a different colour and a different proportion out of 20 and calculate the numbers based on your new colour.

3 The proportion of red cars in the car park is always the same at 2 out of 15.

- a How many red cars are there when there are:
 - i 30 cars?
 - ii 90 cars?
 - iii 195 cars?
- b How many cars are parked when the number of red cars is:
 - i 10?
 - ii 22?
 - iii 32?
- c When the car park is full, there are 40 red cars. What is the capacity of the car park?



Challenge 3

1 A sweet factory produces 5 different chocolate bars. The different flavours are always produced in the same proportions. For every 3 coconut flavoured bars, there are 5 honeycomb, 1 coffee, 7 orange and 4 strawberry.

- a How many coconut flavoured bars are there if the total number of chocolate bars is:
 - i 40?
 - ii 200?
 - iii 960?
 - iv 4800?
- b What is the total number of chocolate bars if there are:
 - i 100 strawberry flavoured bars?
 - ii 280 orange flavoured bars?
 - iii 79 coffee flavoured bars?
 - iv 255 honeycomb flavoured bars?

- 2 In a town with a population of 7680 adults, 1 driver in every 9 has an advanced driver qualification. 3 out of every 4 adults in the city are drivers. How many advanced drivers are there in the town?

