



- 1 Write down 50% of £86

(1 mark)

50% is one half

Half of 86 is 43, so the answer is 43 pounds

£43

- 2 The value of a van is multiplied by 0.88 each year.

Write down the percentage decrease in the value of the van each year.

(1 mark)

A multiplier of 0.88 means the van keeps 88% of its value

$100\% - 88\% = 12\%$ decrease each year

12%

- 3 Work out 15% of £60

(2 marks)

10% of 60 is 6

5% is half of 10%, so 5% of 60 is 3

$15\% = 10\% + 5\% = 6 + 3 = 9$ pounds

£9

- 4 Work out 23% of £640

(2 marks)

$23\% = 0.23$

$0.23 \times 640 = 147.2$

£147.20

5

A bottle contains 850 ml of juice.

34% of the juice is orange juice.

Work out how many millilitres of orange juice are in the bottle.

(2 marks)

Percent means "out of 100", so $34\% = 34/100 = 0.34$. Multiplying by 0.34 finds 34 hundredths of the whole amount

34% as a decimal is 0.34

$0.34 \times 850 = 289$, so there are 289 ml of orange juice

289 ml

6

Hannah puts £2400 into a savings account.

The account pays 3% simple interest each year.

Work out the total amount of interest Hannah gets after 3 years.

(2 marks)

Interest for one year

$3\% \text{ of } 2400 = 0.03 \times 2400 = 72 \text{ pounds}$

Simple interest is the same each year, so over 3 years it is $3 \times$

$72 = 216 \text{ pounds}$

£216

7

Omar invests £3500 in a savings account.

The account pays 2.4% simple interest each year.

Work out the total amount of interest Omar gets after 6 years.

(3 marks)

Interest for 1 year

$0.024 \times 3500 = 84$

Simple interest is the same every year

$84 \times 6 = 504$

Interest = £504

8

Work out 30% of 60% of £250

(2 marks)

$60\% \text{ of } 250 = 0.6 \times 250 = 150$

$30\% \text{ of } 150 = 0.3 \times 150 = 45$, so the answer is 45 pounds

£45

9

A jacket costs £85.

In a sale, the price of the jacket is reduced by 18%.

Work out the sale price of the jacket.

(3 marks)

$$100\% - 18\% = 82\% \text{ so multiplier} = 0.82$$

$$0.82 \times 85 = 69.7$$

$$\text{Sale price} = \text{£}69.70$$

10

An electric drill costs £68.50 before VAT is added.

VAT is charged at 20%.

Work out the total price of the drill including VAT.

(3 marks)

$$100\% + 20\% = 120\% \text{ so multiplier} = 1.2$$

$$1.2 \times 68.50 = 82.2$$

$$\text{Total price} = \text{£}82.20$$

11

Ben's rent is £240 each week.

His rent is increased by 35%.

Work out Ben's new weekly rent.

(3 marks)

$$10\% \text{ of } 240 \text{ is } 24, \text{ so } 30\% \text{ is } 3 \times 24 = 72$$

$$5\% \text{ is half of } 10\%, \text{ so } 5\% \text{ of } 240 \text{ is } 12$$

$$\text{The increase is } 72 + 12 = 84 \text{ pounds, so the new rent is } 240 + 84 = 324 \text{ pounds}$$

$$\text{£}324$$

12

Lena wants to reduce a price by 15%.

She multiplies the price by 1.15

a. Explain the mistake Lena has made and write down the correct multiplier.

b. Use the correct multiplier to reduce £60 by 15%.

(3 marks)

a.)

$$1.15 = 115\% \text{ so it makes the price bigger}$$

$$\text{Reduce by } 15\% \text{ leaves } 100\% - 15\% = 85\%$$

$$\text{Multiplier} = 0.85$$

b.)

$$0.85 \times 60 = 51$$

$$\text{£}51$$

13

There are 1200 pupils in a school.

35% of the pupils walk to school and 28% of the pupils come by bus. All the other pupils come by car.

Work out how many pupils come by car.

(3 marks)

$$\text{Walk: } 0.35 \times 1200 = 420$$

$$\text{Bus: } 0.28 \times 1200 = 336$$

$$420 + 336 = 756$$

$$1200 - 756 = 444$$

444 pupils

14

Ravi is choosing between two vouchers for the same online shop.

Voucher A gives 24% off a £75 order.

Voucher B gives 32% off a £55 order.

Which voucher saves more money?

You must show your working.

(3 marks)

Voucher A saving

$$0.24 \times 75 = 18 \text{ pounds}$$

Voucher B saving

$$0.32 \times 55 = 17.60 \text{ pounds}$$

18 is more than 17.60, so Voucher A saves more money (by 40p)

15

Zainab earns £28 400 a year. Her bonus is 4.5% of her yearly pay.

Ravi earns £24 900 a year. His bonus is 5.2% of his yearly pay.

Who gets the larger bonus, and by how much?

(4 marks)

$$\text{Zainab: } 0.045 \times 28\,400 = 1278$$

$$\text{Ravi: } 0.052 \times 24\,900 = 1294.80$$

$$1294.80 - 1278 = 16.80$$

Ravi, by £16.80

16

Kirsty buys a sofa costing £840

She pays a deposit of 35% of the cost.

She pays the rest of the cost in 12 equal monthly payments.

Work out the amount of each monthly payment.

(4 marks)

Deposit

$$35\% \text{ of } 840 = 0.35 \times 840 = 294 \text{ pounds}$$

Amount left to pay

$$840 - 294 = 546 \text{ pounds}$$

Each monthly payment

$$546 / 12 = 45.50 \text{ pounds}$$

£45.50

17

A cinema has 350 seats.

One evening, 92% of the seats are filled.

Each person pays £8.50 for a ticket.

The cinema has to give 20% of the ticket money to the film distributor.

Work out how much of the ticket money the cinema keeps for that evening.

(5 marks)

Number of people

$$92\% \text{ of } 350 = 0.92 \times 350 = 322$$

Ticket money

$$322 \times 8.50 = 2737 \text{ pounds}$$

The distributor takes 20%, so the cinema keeps 80%

$$0.8 \times 2737 = 2189.60 \text{ pounds}$$

£2189.60