



- 1 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

- 2 a. Kai scored 18 out of 25 in a spelling test. Write his score as a percentage.
b. Write £6 as a percentage of £40

(2 marks)

a)

$$\frac{18}{25} = \frac{72}{100}$$

72%

b)

$$\frac{6}{40} = \frac{3}{20}$$

$$\frac{3}{20} = \frac{15}{100}$$

15%

- 3 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 × 850 = 289, so there are 289 ml of orange juice

289 ml

- 4 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 $3 \times 72 = 216$ pounds

£216

- 5 Josh puts £800 into a savings account. The account pays 2.5% simple interest each year.
Work out how much money is in the account after 4 years.

(2 marks)

interest for 1 year

$$1\% \text{ of } 800 = 8$$

$$2.5\% \text{ of } 800 = 20$$

4 years

$$4 \times 20 = 80$$

$$800 + 80 = 880$$

£880

- 6 a. A school has 640 pupils. Next year the number of pupils will increase by 5%. Work out the number of pupils next year.
b. A computer game costs £45. In a sale its price is reduced by 20%. Work out the sale price of the game.

(3 marks)

a)

$$10\% \text{ of } 640 = 64$$

$$5\% \text{ of } 640 = 32$$

$$640 + 32 = 672$$

672 pupils

b)

$$10\% \text{ of } 45 = 4.50$$

$$20\% \text{ of } 45 = 9$$

$$45 - 9 = 36$$

£36

- 7 Ben's rent is £240 each week.
His rent is increased by 35%.
Work out Ben's new weekly rent.

(3 marks)

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

5% is half of 10%, so 5% of 240 is 12

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

£324

- 8 Ruby's family eat at a restaurant. They have 2 pizzas at £9.50 each and 3 drinks at £2.40 each.
VAT at 20% is added to the bill.
Work out the total cost of the bill including VAT.

(3 marks)

$$2 \times 9.50 = 19.00$$

$$3 \times 2.40 = 7.20$$

$$19.00 + 7.20 = 26.20$$

VAT is 20%

$$0.2 \times 26.20 = 5.24$$

$$26.20 + 5.24 = 31.44$$

£31.44

- 9 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)

- 10 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

- 11 The price of a jacket is reduced by 10%.
The reduced price is £63.
Work out the price of the jacket before the reduction.

(2 marks)

The reduced price is 90% of the original price

$$\text{Original price} = 63 \div 0.9 = £70$$

Check

$$70 \times 0.9 = £63$$

£70

- 12 A trader buys a table for £68.
She sells the table for £85.
Work out her percentage profit.

(3 marks)

$$\text{Profit} = 85 - 68 = £17$$

$$\text{Percentage profit} = 17 \div 68 = 0.25$$

$$0.25 \times 100 = 25\%$$

25%

13

Rosa puts £3000 into a savings account.

The account pays 2% compound interest per year.

Work out the value of her savings at the end of 2 years.

(2 marks)

Each year the balance becomes 102% of its previous value, so multiply by 1.02. In year 2 you earn interest on the new balance, including the first year's interest

End of year 1

$$3000 \times 1.02 = £3060$$

End of year 2

$$3060 \times 1.02 = £3121.20$$

Check with the multiplier method

$$3000 \times 1.02^2 = £3121.20$$

£3121.20