

Fractions, decimals and percentages

Delving deeper into percentages

Finding a percentage of an amount

1 Find:

1a 10% of £200 =

1b 50% of £5 =

1c 20% of £8 =

Fractions, decimals and percentages

Delving deeper into percentages

1d 25% of £100 =

1e 40% of £500 =

1f 90% of £200 =

Fractions, decimals and percentages

Delving deeper into percentages

1g $33\frac{1}{3}\%$ of £12 =

1h 75% of £800 =

1i 75% of £1000 =

Fractions, decimals and percentages

Delving deeper into percentages

Percentage increase and decrease

2 Use the multiplier method to calculate the following:

2a Add 17.5% VAT to £415.

2b Add 3.2% interest to £1148.

2c Increase a salary of £15000 by 1.6%.

Fractions, decimals and percentages

Delving deeper into percentages

2d Increase a price of £199 by 3.2%.

2e Decrease £420 by 7%.

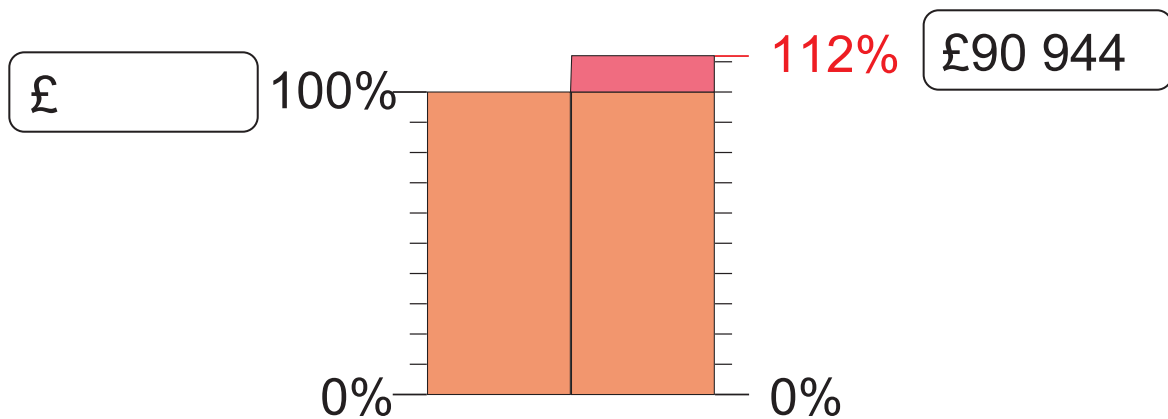
2f Find the price of a £240 television offer with a 15% discount.

2g Find the price of an £11999 car after a 22% discount.

Fractions, decimals and percentages

Delving deeper into percentages

- 3 The end of year profits of a large company increased this year by 12% to £90944.
Find the profits made last year.



answer

Fractions, decimals and percentages

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- 4 After one year, the value of a car has fallen by 15% to £8330.
What was the value of the car at the beginning of the year?

answer

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Delving deeper into percentages

- 5** A special bottle of washing up liquid contains 715 ml of liquid. The bottle is marked '30% extra free'. How much liquid is there in a normal bottle?

answer

Fractions, decimals and percentages

Delving deeper into percentages

Finding a percentage

6 Express each of the following as percentages.

6a 8 out of 50

6b 3 out of 25

6c 8 out of 20

6d 3 out of 10

Fractions, decimals and percentages

Delving deeper into percentages

6e 6 out of 50

6f 6 out of 40

6g 12 out of 80

6h 9 out of 30

6i 27 out of 30

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- 7 In a class of 25 children there are 10 girls.
What percentage of the class are girls and what percentage are boys?

Girls: %

Boys: %

- 8 In the crowded football match there are 28000 Manchester United supporters and 22000 Tottenham supporters.
What percentage of the crowd supported each team?

Manchester United: %

Tottenham: %

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Percentage increases and percentage decreases

- 9 A baby weighed 5.6 kg and six weeks later her weight had increased to 6.8 kg. Find the percentage increase.

answer

- 10 In a science experiment the length of a spring increased by 4cm to 20cm. Find the percentage increase in the length of the spring.

answer

Fractions, decimals and percentages

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- 11** A battery was tested and found to power a cassette player for 12 hours. An improved version of the battery powered the cassette player for an extra 30 minutes.
Find the percentage increase in the life of the batteries.

answer

- 12** An investor bought some shares at a price of £4.88 each. The price of the shares dropped to £3.96.
Find the percentage loss.

answer

Fractions, decimals and percentages

Delving deeper into percentages

- 13** Jimmy paid £120 for a CD player. He sold it for £105.
What was his loss as a percentage of the price he paid?

answer

Simple interest

- 14** Jane invests £1200 in a bank account which earns interest at the rate of 6% simple interest per year.

Find the value of her investment after:

- 14a** 1 year

Fractions, decimals and percentages

Delving deeper into percentages

14b 2 years

14c 5 years

15 A sum of £5000 is to be invested for 10 years.
What is the final value of the investment if the annual interest rate is:

15a 5%

Fractions, decimals and percentages

Delving deeper into percentages

15b 4.8%

15c 7.2%

Fractions, decimals and percentages

Delving deeper into percentages

Compound interest

16 Which of the following investments would earn most interest?

16a £300 for 5 years at 2% compound interest per year.

16b £500 for 2 years at 3% compound interest per year.

16c £200 for 3 years at 8% compound interest per year.

answer

Fractions, decimals and percentages

Delving deeper into percentages

Repeated percentage decrease.

17 The value of a computer decreases at a rate of 25% per year.
A new computer costs £1600. What will the value of the computer be after:

17a 2 years

17b 6 years

17c 10 years