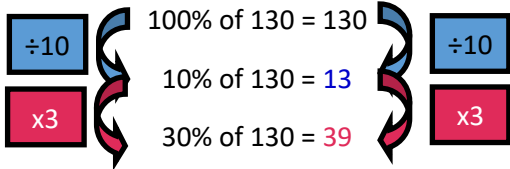


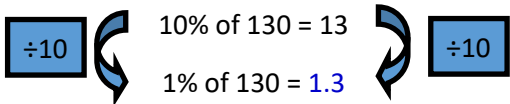
1. Finding percentages of amounts

Break down 100% into building blocks to work out other percentages of an amount.

Find 30% of 130



Find 9% of 130



$$9\% = 13 - 1.3 = 11.7$$

Use these facts to find 39% of 130

$$30\% = 39 \quad 9\% = 11.7$$

$$\text{So } 39\% = 39 + 11.7 = 50.7$$

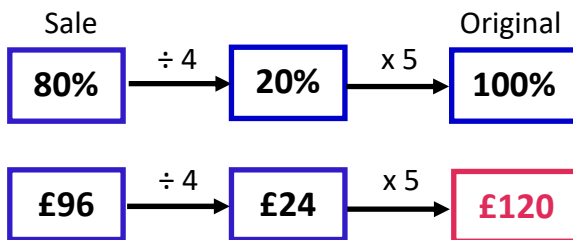
4. Reverse percentages

A shop has a sale, 20% off all items.
Sophie pays £96 for some sunglasses.

How much did the sunglasses cost before the sale?

$$100\% - 20\% = 80\%$$

The sunglasses cost 80% of the original price



The sunglasses cost £120 before the sale

2. Percentage increase & decrease

A bank pays 15% interest per year.
How much will I have if I invest £20 for one year?

Step 1 - find 15% of £20:

$$10\% \text{ is } \pounds 2, 5\% \text{ is } \pounds 1,$$

$$\text{so } 15\% \text{ is } \pounds 2 + \pounds 1 = \pounds 3$$

Step 2 - add it on:

$$\pounds 20 + \pounds 3 = \pounds 23$$


So the account will have £23 in it after one year

A pair of shoes is in a sale.
The sale offers 20% off all prices.
The shoes originally cost £31.
What is the sale price of the shoes?

Step 1 - find 20% of £31:

$$10\% = \pounds 3.10, \text{ so } 20\% = \pounds 6.20$$

Step 2 - work out the new cost:

$$\pounds 6.20 \text{ off leaves } \pounds 31 - \pounds 6.20 = \pounds 24.80 \text{ to pay}$$


Maths, Y9 - Percentages (Non Calculator)

5. Repeated percentage increase & decrease

£5000 is invested over 3 years at a compound interest rate of 2% per annum.

Calculate the total value of the investment after 3 years.

Note: the amount of interest added will change as the investment grows

Step 1 - find the amount in the account after 1 year:

$$1\% \text{ of } \pounds 5000 \text{ is } \pounds 50, \text{ so } 2\% \text{ is } \pounds 100$$

$$\pounds 5000 + \pounds 100 = \pounds 5100$$

Step 2 - find the amount in the account after 2 years:

$$1\% \text{ of } \pounds 5100 \text{ is } \pounds 51, \text{ so } 2\% \text{ is } \pounds 102$$

$$\pounds 5100 + \pounds 102 = \pounds 5202$$

Step 3 - find the amount in the account after 3 years:

$$1\% \text{ of } \pounds 5202 \text{ is } \pounds 52.02, \text{ so } 2\% \text{ is } \pounds 104.04$$

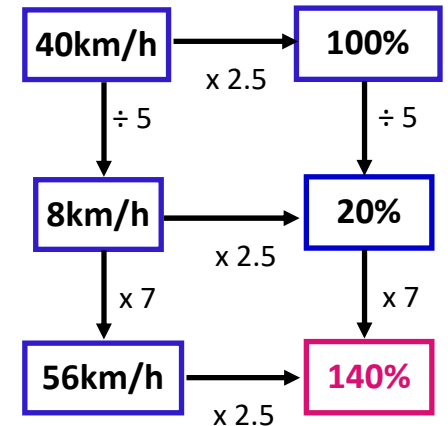
$$\pounds 5202 + \pounds 104.04 = \pounds 5306.04$$

So the account will have £5306.04 in it after 3 years

3. Percentage change

A car is travelling at 40 km/h. The car increases its speed to 56 km/h.

Calculate the percentage increase in the speed of the car.



The value of a car decrease by 5% each year.



Freddie bought a car 2 years ago for £10000

Work out the value of the car now

Step 1 - find the value of the car after 1 year:

$$10\% \text{ of } \pounds 10000 \text{ is } \pounds 1000, \text{ so } 5\% \text{ is } \pounds 500$$

$$\pounds 10000 - \pounds 500 = \pounds 9500$$

Step 2 - find the value of the car after 2 years:

$$10\% \text{ of } \pounds 9500 \text{ is } \pounds 950, \text{ so } 5\% \text{ is } \pounds 475$$

$$\pounds 9500 - \pounds 475 = \pounds 9025$$

So the car will be worth £9025 after 2 years