

1. Multipliers

We can use **multipliers** to help find a percentage of something.

Calculate 42% of 500

To find the multiplier, divide by 100:

$$42\% = 42 \div 100 = \mathbf{0.42}$$

$$\text{Multiply 500 by 0.42: } 500 \times 0.42 = \mathbf{210}$$

Calculate 87% of 94

To find the multiplier, divide by 100:

$$87\% = 87 \div 100 = \mathbf{0.87}$$

$$\text{Multiply 94 by 0.87: } 94 \times 0.87 = \mathbf{81.78}$$

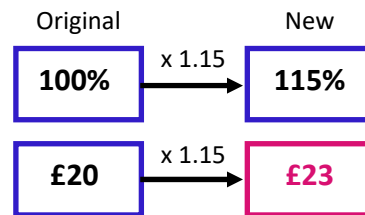
2. Percentage increase & decrease

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

$$100\% + 15\% = 115\%$$

115% is equivalent to 1.15

1.15 is the multiplier.

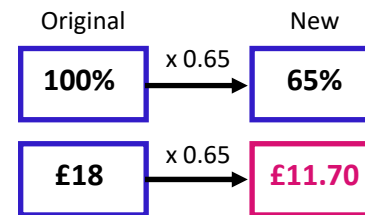


A woman goes out to buy a scarf for £18.
The shop is having a 35% off sale.
How much did the woman pay for the scarf?

$$100\% - 35\% = 65\%$$

65% is equivalent to 0.65

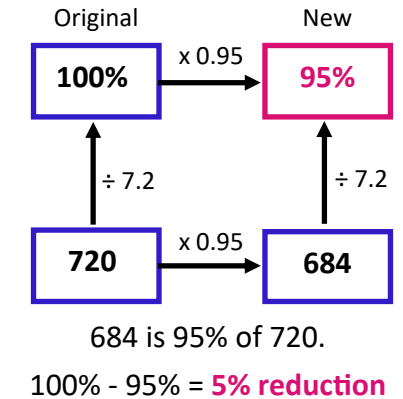
0.65 is the multiplier.



3. Percentage change

The number of workers at a factory is reduced from 720 to 684.

Calculate the percentage reduction.



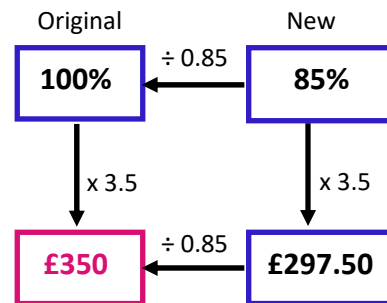
Maths, Y9 - Percentages (Calculator)

A shop has a 15% sale.
A TV costs £297.50 in the sale.
What did it cost before the sale?

The original price is **£350**

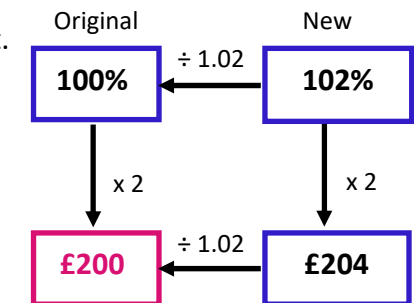
4. Reverse percentages

In these questions we are given the value after the percentage change and need to find the **original amount**.



Saim invests some money at 2% interest.
After 1 year it is worth £204.
How much did he invest?

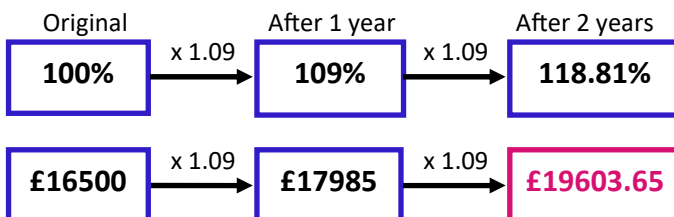
The original investment is **£200**



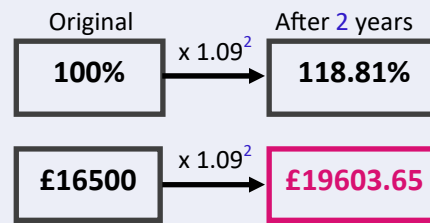
5. Repeated percentage increase & decrease

Gemma invests £16500 for 8 years at a compound interest rate of 9% a year.

Calculate the value of Gemma's savings after 2 years.



A more efficient method



A new computer costs £1400. It depreciates by 18% each year.

Calculate the value of computer after 8 years.

$$100\% - 18\% = 82\%$$

82% is equivalent to 0.82
0.82 is the **multiplier**

The value after 8 years is **£286.18**

