

Maths Day 2

As a shop owner, one of the biggest areas of maths you might use is PERCENTAGES. You would need to work out how to put percentage increases or decreases on your prices depending on demand – much like the shops are doing now for toilet roll!

You would also have to work out your percentage profit on what you have sold or to calculate what percentage to add to the price you bought your items - before you sell them to your customers.

With this in mind, we are going to do a couple of days on working out percentages of amounts today and then, tomorrow, using this to increase or decrease some prices.

Follow the explanations below and then have a go at the calculations at the end.

How do you find 10% of a number?

(We divide the amount by 10)

$$\text{so } 10\% \text{ of } 200 = 200 \div 10 = 20$$

200

How do we use this to find 20%?

$$\text{so } 10\% \text{ of } 200 = 200 \div 10 = 20$$

$$\text{so } 20\% = 10\% \times 2 = 20 \times 2 = 40$$

How would we use this to find other multiples of 10?

Simply find 10% and then multiply that answer by the 10s digit. e.g. 70% of 200 would be

$$200 \div 10 \text{ and then } \times 7. \quad 200 \div 10 \times 7 = 140$$

Remember: to find 50% it is simply easier to halve 100%

How do you find 5% of a number?

We divide the amount by 10 to find 10% and halve the 10% answer to find 5%.

$$\text{so } 5\% \text{ of } 200 = 200 \div 10 = 20 \\ \text{and } 20 \div 2 = 10.$$

How do we use this to find 15%?

so 10% of 200 = $200 \div 10 = 20$; 5% is $20 \div 2 = 10$
then add 10% and 5% together; $20 + 10 = 30$

How would we use this to find other multiples of 5?

Simply find the multiple of 10% and then add 5%.
e.g. 35% of 200 would be: $30\% = 200 \div 10 \times 3 = 60$
5% would be $200 \div 10 \div 2 = 10$ and $60 + 10 = 70$

Remember: to find 25% it is simply easier to halve 100% to 50% and halve again to 25%.

200

So what is...

30% of 200 =

40% of 200 =

60% of 200 =

90% of 200 =

50% of 200 =

So what is...

45% of 200 =

65% of 200 =

85% of 200 =

55% of 200 =

95% of 200 =

25% of 200 =

How do you find 1% of a number?

(We divide the amount by 100)

$$\text{so } 1\% \text{ of } 200 = 200 \div 100 = 2$$

How do we use this to find 2%?

$$\text{so } 1\% \text{ of } 200 = 200 \div 100 = 2$$

$$\text{so } 2\% = 1\% \times 2 = 2 \times 2 = 4$$

How would we use this to find other multiples of 1?

Simply find 1% and then multiply that answer by the ones figure. e.g. 7% of 200 would be

$$200 \div 100 \text{ and then } \times 7. \quad 200 \div 100 \times 7 = 14$$

So what is... 1). 3% of 200; 2). 4% of 200; 3). 9% of 200

So now have a go at these. Get as far as you can.

Percentages of Amounts

Bronze

$$20\% \text{ of } 1,800 =$$

$$20\% \text{ of } 1\,500 =$$

$$70\% \text{ of } 80 =$$

$$5\% \text{ of } 4200 =$$

$$55\% \text{ of } 400 =$$

$$15\% \times 440 =$$

Silver

$$15\% \text{ of } 250 =$$

$$35\% \text{ of } 60 =$$

$$95\% \text{ of } 240 =$$

$$15\% \text{ of } 90 =$$

Gold

$$12\% \text{ of } 800 =$$

$$72\% \text{ of } 2000 =$$

$$66\% \text{ of } 3000 =$$

Calculate **60%** of **765**.

Were you a bronze, silver or gold medalist?

Do e-mail Mr Crick if you want the answers to any of the questions on this sheet.