Best value for money

This knowledge organiser will give you the methods to calculate the best value for money of different product sizes, with or without a calculator.

Check that you can:

- *change between different units of money (£ and p)*
- *change between different units of measurement (ml and litres, cm and metres, etc.)*
- *find the highest common factors or lowest common multiples of two or three numbers.*

Calculating the best value with a calculator:

The easiest method to use is to calculate the **unit** cost in each deal (the **unitary** method).

If 24 kg of dog food costs £50, then the cost of 1 kg would be $£50 \div 24 = £2.083$ per kg.

For example:

A shop sells three different-sized bags of dog food.

A 12 kg bag of dog food costs £38.50.

A 15 kg bag of dog food costs £48.20.

A 20 kg bag of dog food costs £64.

Which bag offers the better value for money?

Workings:

$$38{\cdot}50 \div 12\text{kg} = £3.208 \text{ per kg}$$
$$48{\cdot}20 \div 15\text{kg} = £3.213 \text{ per kg}$$
$$64 \div 20\text{kg} = £3.20 \text{ per kg}$$

Conclusion: the 20 kg bag is the better value for money.

Calculating the best value without a calculator:

The easiest thing to do to compare prices without a calculator is to find either common factors or common multiples of the amounts of the products.

For example:

A shop sells three sizes of chocolate bar.

75 g costs 90 p.

100 g costs £1.15.

250 g costs £2.95.

Which size bar offers the better value for money?

Workings:

75, 100 and 250 all divide exactly into 1500.

$$75\text{g} \times 20 = 1500\text{g} \text{ so } 90\text{p} \times 20 = £18$$
$$100\text{g} \times 15 = 1500\text{g} \text{ so } £1.15 \times 15 = £17.25$$
$$250\text{g} \times 6 = 1500\text{g} \text{ so } £2.95 \times 6 = £17.70$$

Conclusion: the **100 g chocolate bar** is the better value for money.

Metric conversions
(it is useful to know these):

Mass:

$$1000\text{g} = 1\text{kg}$$

Capacity:

$$1000\text{ml} = 1 \text{ litre (l)}$$

Length:

$$10\text{mm} = 1\text{cm}$$
$$100\text{cm} = 1\text{m}$$
$$1000\text{m} = 1\text{km}$$

Money conversion:

$$£1 = 100 \text{ pence}$$

Think you can guess the correct answer? Think again!

It is very important that you show all your calculations when answering value for money questions.

Whilst it is technically possible for you to guess which is the better value for money, you would not get any marks unless you showed some correct calculations.

REMEMBER!

To be able to compare different offers, we either need to calculate the unit cost of a single product or the price of a common amount of the product (using either common factors or common multiples).