

# Worksheet 7: Reverse % and compound interest / depreciation

Answers on separate paper so you can hand them in!

## Reverse percentages

**Remember:** divide the amount you know by the percentage that you know to find the value of 1% and then multiply by the percentage you want to find

- 1) 4% of a length is 12cm.  
Find the whole length
- 2) 12% of a tin of beans by weight is fibre.  
A particular can of beans has 48g of fibre.  
How much did the beans weigh?
- 3) 60% of a group of people disagree with the proposal for a new road.  
120 people disagree with the proposal.  
How many people were asked?
- 4) 17% of a cake is sugar.  
The weight of sugar in the cake is 51g  
How much did the whole cake weigh?
- 5) A mechanical digger has VAT added to the cost at 20%  
The builder paid £8 000 VAT on the digger  
How much did the digger cost before the VAT was added?
- 6) A car has VAT added at 20%  
The total cost including VAT was £14 400  
Work out the cost of the car before the VAT was added.  
Hint:  $100\% + 20\% = 120\%$
- 7) A coat is advertised in a sale as being reduced by 30%  
The sale price of the coat is £84  
What should the cost of the coat have been before the sale?

# Compound Interest and Depreciation

Use a calculator!

**Hint:** use multipliers for increasing and decreasing the percentages

**Example:** increase £300 by 20%.

**Suggested calculation:** 20% is added on to 100% so the multiplier is 1.2  
 $300 \times 1.2 = £360$

- 1) Algernon invests £1200 in an account that pays 10% compound interest per year.

Calculate the value of his investment after 3 years

Hint: find multiplier and raise it to power 3

- 2) There is 1g of bacteria in a dodgy sausage roll left in the sun.

The weight of bacteria grows at a compound 50% per hour

- Calculate the weight of bacteria after 1 hour
- Calculate the weight of bacteria after 3 hours
- Calculate the weight of bacteria after 10 hours

Hint: use that power button with the multiplier

- 3) A car loses 30% of its value each year because of depreciation.

A fleet car is bought new for £15 000

Calculate the value of the car after

- 1 year
- 3 years

Hint: the multiplier is less than 1 (100% – 30%)

The company decide the scrap the car when its value drops below £1000.

\*c) Can you estimate how many years before the car is scrapped?

- 4) Monzur invests £300 000 in a bond that pays 2.4% compound interest per year.

He leaves the bond for 10 years.

Calculate the value of the bond after 10 years.

Hint: power button!