


### Percentage Problem

179 adults, 33 girls and 48 boys are members of a tennis club. 40 more children join the club. The total number of boys is now 23% of the total number of members. How many of the 50 children were girls?

### Percentage Problem

A rectangle has dimensions  $x$  mm and  $y$  mm.   $x$  is increased by 20%,  $y$  is decreased by 5%. Work out the percentage change in the area of the rectangle.

### Percentage of an Amount

A market stall buys 150 bags for £5.60 each. The store sells 45% of the bags for £9.50 each. The remaining bags are later sold at a reduced price of £5 each. How much profit or loss did the stall make?

### Percentage of an Amount

A spa has three different treatment packages; bronze, silver and gold. A spa has 485 customers one week. 30% select the bronze package. 46% select the silver package. Calculate the number of customers who selected the gold package.



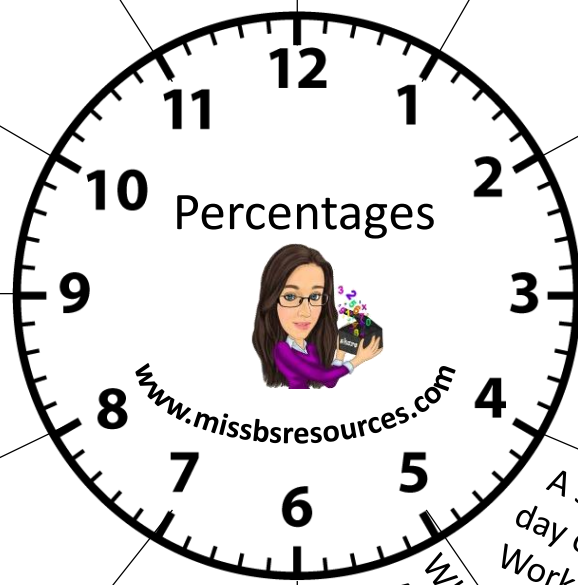
**Percentage Problem**

In a gym, 75% of the members are male. 60% of female members use the gym at least once a week. 56% of male members **don't** use the gym at least once a week. What percentage of the members use the gym at least once a week?



**Percentage Change**

Ben runs a coconut stall. One day he gives away 75 coconuts as prizes. The next day he gives away 93 coconuts as prizes. Work out the percentage increase in the number of coconuts he has to give away as a prize.



**Growth and Decay**

The maximum depth of an ice sheet called the 'Terre Adélie' in Antarctica is  $D$  metres given by  $D = 4\,776 \times 0.995^y$

a) Explain how you know the ice sheet is decreasing in depth.

b) After how many complete years ( $y$ ) will the ice sheets depth be below 4.7km.

Jacob wants to invests £2 300 for 3 years. Which bank should he invest in?

<b>Bank A</b> The account pays 3% interest in the first year and 1.5% compound interest from the second year annually.	<b>Bank B</b> 2% per annum compound interest.	<b>Bank C</b> 6% interest paid at the end of year 3.
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**Reverse Percentages**

In a sale, the original price of a TV was reduced by  $\frac{1}{8}$ . The sale price of the TV is £315. Work out the original price.

**Percentage Increase or Decrease**

In a shop, the normal price of a jacket is £85. The shop has a sale. In the first 5 days of the sale, the price of the jacket is reduced by 30%. In the last two days of the sale the jacket is reduced by a further £15. Isobel has £45. Does Isobel have enough money to buy the jacket on the 6<sup>th</sup> day of the sale?

A shop has a closing down sale that offers 15% off all prices. On the day of closing they reduce all prices by a further 40%. Work out the overall percentage reduction on the price of an item.

When steel is heated at 38°C its length expands by 0.1%. After being heated a steel pipe is 20.02m in length. What was the original length?

