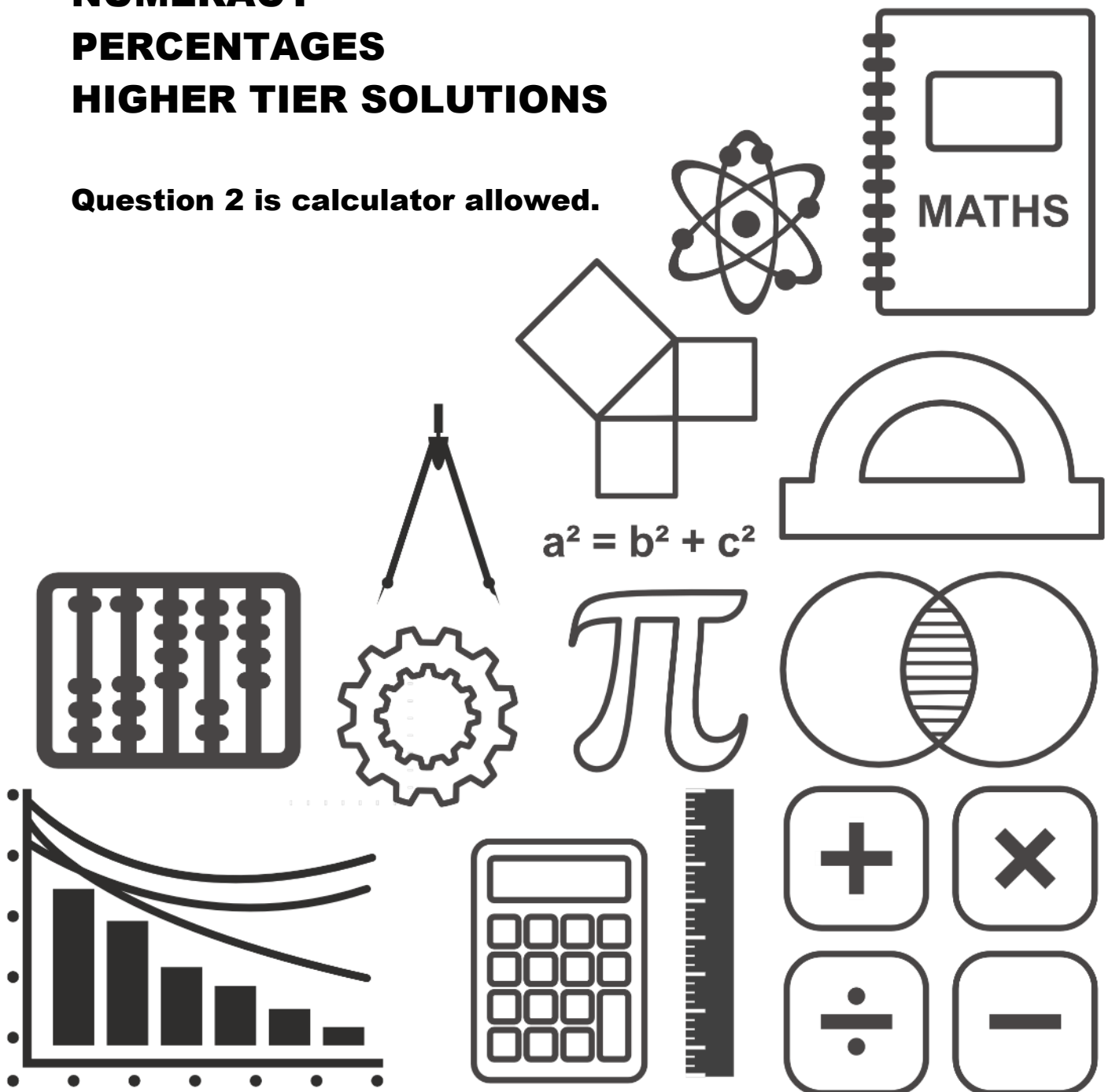


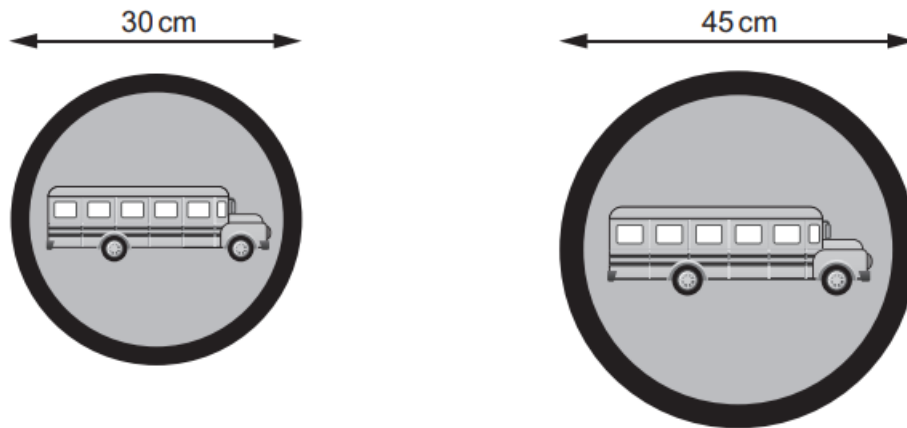
MATHSDIY

GCSE TOPIC BOOKLET NUMERACY PERCENTAGES HIGHER TIER SOLUTIONS

Question 2 is calculator allowed.



1. A company produces two **similar** road signs.



Diagrams not drawn to scale

The selling price of the smaller road sign is £12.00.
This selling price was calculated from the cost price by:

- adding a profit of 25%, $\times 1.25 = 5/4$
- then adding VAT at 20%. $\times 1.2 = 6/5$

Calculate the cost price of the smaller road sign.
You must show all your working.

[4]

$$\text{Cost Price} \times 1.25 \times 1.2 = \text{Selling Price}$$

$$\text{Cost Price} = \frac{12}{1.25 \times 1.2}$$

$$= \frac{12}{\frac{5}{4} \times \frac{6}{5}}$$

$$= \frac{12}{30/20}$$

$$= 12 \times \frac{20}{30} = \frac{24}{3} = \underline{\underline{£8}}$$

Tip you can work in % or decimals or fractions. Choose whichever option you are more comfortable with.

2. *Tube Cycles* makes a large number of bikes each day.

On 1st December 2016, 4000 bikes were made at the *Tube Cycles* factory.
 The *Tube Cycles* factory was working at 80% capacity on that day.
 This means that only 80% of the maximum possible number of bikes were made.

When the factory works at 95% capacity, how many bikes are made in one day? [3]

$$80\% \times \text{full capacity} = 4000$$

$$0.8 \times \text{full capacity} = 4000$$

$$\text{full capacity} = \frac{4000}{0.8} = 5000$$

$$95\% \times \text{full capacity} = 0.95 \times 5000$$

$$= 4750$$