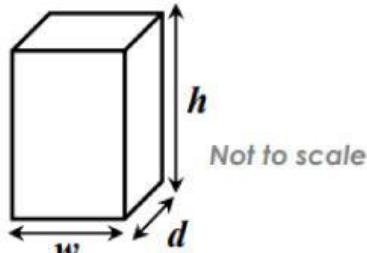




Algebra

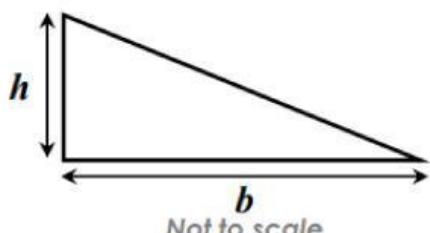
Formulae

10a. Work out the volume (v) of this cuboid using the formula $v = w \times h \times d$, if $w = 3\text{cm}$, $h = 5.5\text{cm}$ and $d = 2\text{cm}$.



VF

10b. Work out the area (a) of this shape using the formula $a = (b \times h) \div 2$, if $b = 5\text{cm}$ and $h = 3.2\text{cm}$.



VF

11a. Circle the correct formula for doubling a number and finding 45%.

$$a = 2n \times 0.45$$

$$a = n \times 2.45$$

$$a = \frac{2n}{0.45}$$



VF

11b. Circle the correct formula for finding 125% of a number.

$$a = n \div 12.5$$

$$a = 0.125n$$



VF

12a. To calculate the BMI of a person, you can use their weight in kilograms and height in metres.

Expressed as the formula:

$$b = \frac{w}{h^2}$$

If someone is 2m tall (h) and weighs 92 kg (w), what is their BMI?



VF

12b. To work out the speed of a travelling car, you can use the distance in miles and the time in hours.

Expressed as the formula:

$$s = \frac{d}{t}$$

If a car travels 12 miles (d) in 30 minutes (t), what speed was it travelling at?



VF

7. The price for a design to be printed on a bag varies, depending on the number of colours used.

The formula below is used to calculate the cost of the printing service:

$$\text{Price} = \mathbf{\pounds}1.54 \times \text{number of colours} + \mathbf{\pounds}2.02$$

VF
HW/Ext

An extra 10% is then added to the final cost of the service.

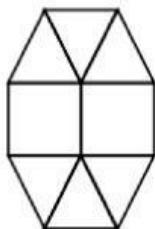
What is the total price for printing a design that includes 7 colours?



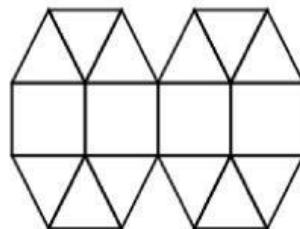
VF
HW/Ext

8. Sarah is creating designs using two different shapes.

She gives each shape a value.



Total value
= 12



Total value
= 24

The formula to create the shapes is always 6 triangles + 2 squares, written $6t + 2s$.

If $s = 0.75$, what is the value of t ?

VF
HW/Ext