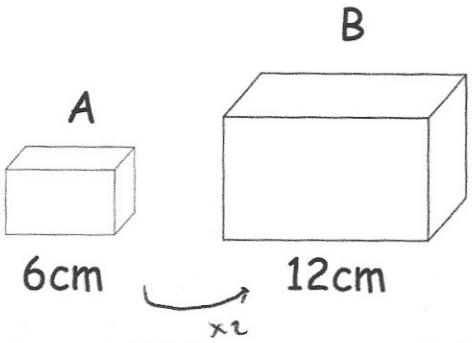
19th December **Higher 5-a-day**

Corbettmaths



Cuboid A and cuboid B are similar.
The surface area of cuboid A is 500cm².
Work out the surface area of cuboid B.

$500 \times 2^2 = 2000\ cm^2$

The force, F newtons, exerted by a magnet on a metal object is inversely proportional to the square of the distance d cm.

When d = 2 cm, F = 50 N.

$F = \frac{k}{d^2}$

$50 = \frac{k}{4}$ $k = 200$

Express F in terms of d.

$F = \frac{200}{d^2}$

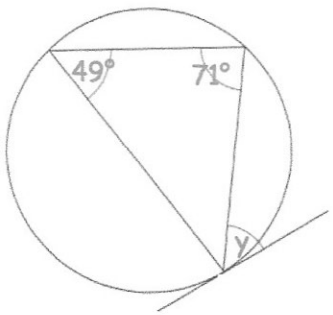
Make w the subject of

$5(w - 2a) = 3w + 7$

$5w - 10a = 3w + 7$

$2w = 10a + 7$

$w = 5a + \frac{7}{2}$



Shown is a tangent to a circle.

Find y and give a reason for your answer.

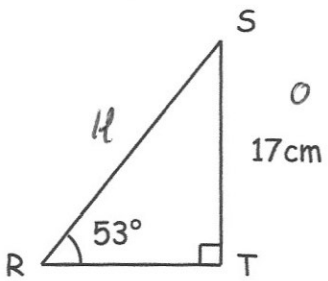
49°

Alternate segment theorem

Shown is triangle RST.
Angle SRT is 53°, to the nearest degree.
ST is 17cm to the nearest centimetre.
Work out the upper bound for the length of RS.

$H = \frac{O}{\sin}$

$\text{Max } H = \frac{\text{max } O}{\text{min } \sin}$



$5^{O}H$

$RS = \frac{17.5}{\sin 52.5} = 22.058\text{cm}$