

11th January



Corbettmaths

A is directly proportional to B squared.

When A = 500, B = 10.

Find A when B = 20.

$$A \propto B^2$$

$$A = kB^2$$

$$500 = k \times 10^2$$

$$500 = 100k$$

$$5 = k$$

$$B = 20$$

$$A = 5B^2$$

$$A = 5 \times 20^2$$

$$A = 5 \times 400$$

$$\underline{\underline{A = 2000}}$$

A book weighs 200g to the nearest 10g.

What is the greatest possible weight of 20 books?

$$\text{UPPER BOUND} = 205\text{g}$$

$$20 \times 205 = \underline{\underline{4100}} \text{ g}$$

Line 1 has gradient 4 and passes through the point (3, 10).

What is its equation?

$$y = 4x + c$$

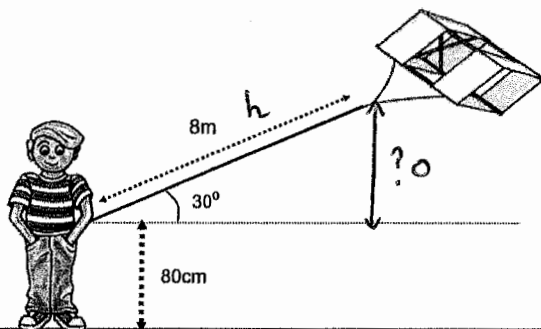
$$c = -2$$

$$\underline{\underline{y = 4x - 2}}$$

$(3, 10)$
 $10 = 4 \times 3 + c$
 $10 = 12 + c$

Write down the equation of a line perpendicular to line 1.

$$y = -\frac{1}{4}x + 7 \leftarrow \text{or any number}$$



The string is held 80cm above the ground.
 The kite is on a string which is 8m long.
 The string makes an angle of 30° with the horizontal.
 Calculate the height of the kite above the ground.

$$\sin \theta = \frac{o}{h}$$

$$\sin 30 = \frac{o}{8}$$

$$? = 8 \sin 30 = 4$$

$$4\text{m} + 80\text{cm}$$

$$4.8\text{m}$$