

29th March



Corbettmaths

The force,  $F$ , between two magnets is inversely proportional to the square of the distance,  $d$ , between them.

When  $F = 4$ ,  $d = 3$ .

Express  $F$  in terms of  $d$ .

$$F \propto \frac{1}{d^2}$$

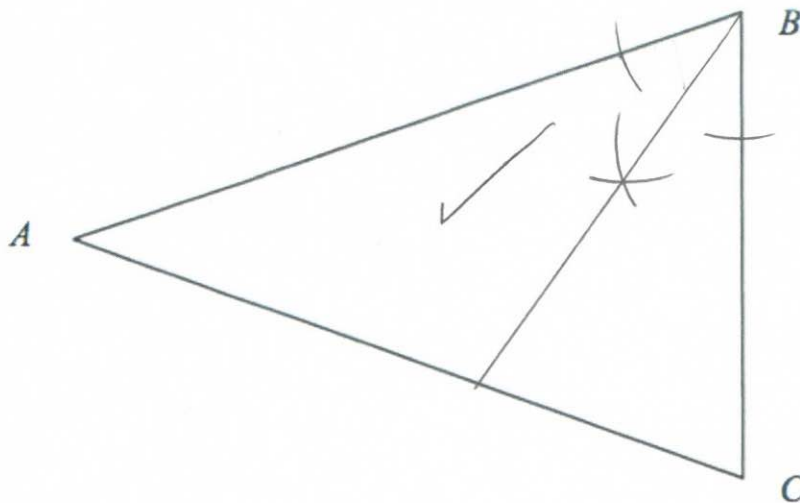
$$F = \frac{k}{d^2}$$

$$4 = \frac{k}{3^2} \quad 4 = \frac{k}{9}$$

$$k = 36$$

$$F = \frac{36}{d^2}$$

ABC is a garden. A tree is planted closer to wall AB than wall BC. Show the possible locations the tree can be planted.



Two spheres have volumes in the ratio 8:125

$$2:5 \text{ sides}$$

The radius of the larger sphere is 30cm.

What is the radius of the smaller sphere?

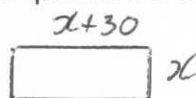
$$30 \div 5 = 6$$

$$6 \times 2 = \underline{12 \text{ cm}}$$

A rectangular field is 30m longer than wide.

The area of the field is 8800m<sup>2</sup>

Work out the perimeter of the field.



$$x(x+30) = 8800$$

$$x^2 + 30x - 8800 = 0$$

$$(x+110)(x-80) = 0$$

$$x = -110 \quad x = 80 \checkmark$$

$$80 + 80 + 110 + 110 = 380 \text{ m}$$