



The radius of a sphere is 4cm.
 The radius of the base of a cone is also 4cm.
 The volume of the sphere is twice the volume of the cone.

$$2\left(\frac{4}{3} \times \pi \times 4^2 \times h\right) = \frac{4}{3} \times \pi \times 4^3$$

$$\frac{2}{3} \times \pi \times 16 \times h = \frac{4}{3} \times \pi \times 64$$

Find the height of the cone.

$$\frac{2}{3} \times 16 \times h = \frac{4}{3} \times 64$$

$$2 \times 16h = 4 \times 64$$

$$32h = 256$$

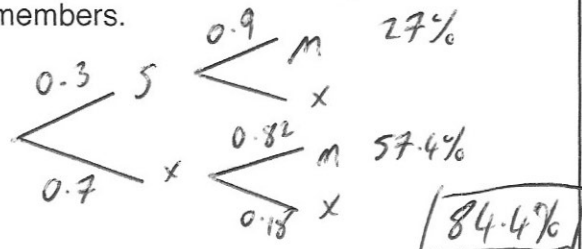
$$h = 8 \text{ cm}$$

On Friday, 30% of the people visiting a leisure centre went swimming.
 90% of the people who swam were members.
 18% of the people who visited the leisure centre but did not go swimming were not members.

$$0.3 \times 0.9 = 0.27$$

$$0.7 \times 0.82 = 0.574$$

Find what the percentage of the visitors to the leisure centre on Friday were members.



Calculate the size of angle DCE

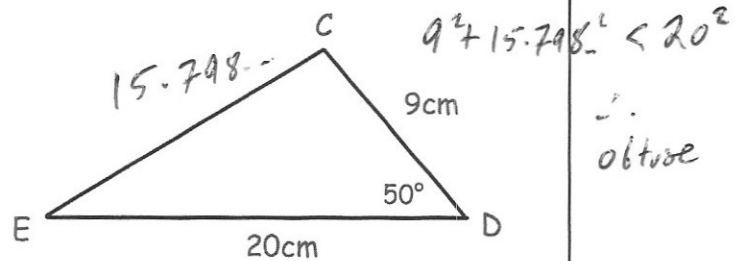
$$CE^2 = 9^2 + 20^2 - 2 \times 9 \times 20 \times \cos 50$$

$$CE = 15.798...$$

$$\frac{9.1250}{15.798...} = \frac{\sin x}{20}$$

$$x = 75.82^\circ$$

or

$$x = 104.13^\circ$$


Express $3x^2 - 18x + 16$ in the form $a(x - b)^2 + c$

$$3(x^2 - 6x) + 16$$

$$3[(x - 3)^2 - 9] + 16$$

$$3(x - 3)^2 - 27 + 16$$

$$3(x - 3)^2 - 11$$



$$\frac{1}{2} \times 9 \times 9 \times \sin 60$$

$$= 35.074...$$

$$35.074... \times 6$$

$$= 210.44 \text{ cm}^2$$

Calculate the area of the regular hexagon