

29th February



Corbettmaths

Given

$$f(x) = \frac{8x - 1}{5}$$

find

$$f(3) = \frac{8 \times 3 - 1}{5} = 4.6$$

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.

$$\text{Sphere } V = \frac{4}{3} \pi r^3 = 268.082 \dots \text{cm}^3$$

Find the height of the cone.

$$\text{Cone } V = 268.082 \div 2 = 134.0412 \text{cm}^3$$

$$\frac{1}{3} \pi (4)^2 h = 134.041286 \dots$$

$$16\pi h = 402.1238597$$

$$\pi h = 25.13 \dots$$

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

Calculate the size of angle DCE

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

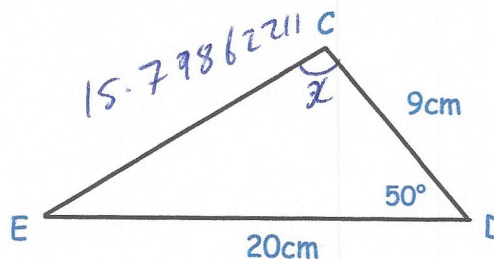
$$CE^2 = 249.5964605$$

$$CE = 15.79862211$$

$$\frac{\sin 50}{15.79862211} = \frac{\sin x}{20}$$

$$x = 75$$

$$87 \text{ or } 104.126$$



$$9^2 + 15.79^2 < 20^2$$

\therefore
obtuse

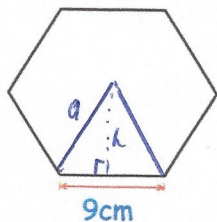
Express $3x^2 - 18x + 16$ in the form $a(x - b)^2 + c$

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

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

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

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



$$h^2 = 9^2 - 4.5^2$$

$$h^2 = 60.75$$

$$h = 7.79422 \dots$$

$$A = \frac{1}{2} (7.79422 \dots) \times 9 = 35.074 \dots$$

Calculate the area of the regular hexagon

$$6 \times 35.074 \dots$$

$$210.444 \text{cm}^2$$