

28th May



Corbettmaths

A car travelled for 170 minutes, to the nearest 5 minutes.

It travelled for a total distance of 120 km, to the nearest 10km

125 km

$$\text{Max } S = \frac{d_{\text{max}}}{t_{\text{min}}}$$

Work out the greatest possible average speed, in m/s

$$\frac{125000}{10000}$$

$$12.4378 \text{ m/s}$$

$$x_{n+1} = -3 - \frac{5}{x_n^2}$$

Starting with $x_0 = -4$

Find x_1 , x_2 and x_3

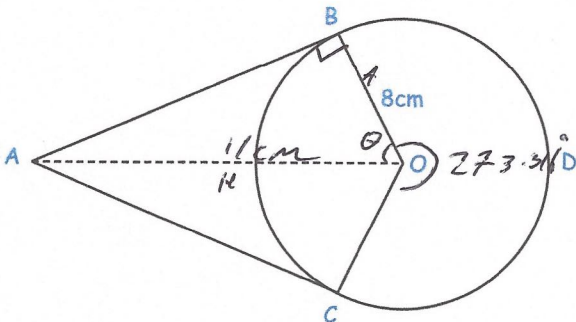
$$x_1 = -3 - \frac{5}{(-4)^2} = -\frac{53}{16}$$

$$x_2 = -3.455678177$$

$$x_3 = -3.418700446$$

Explain the relationship between the values of x_1 , x_2 and x_3 and the equation $x^3 + 3x^2 + 5 = 0$

they are ever increasing approximations to a solution



B, C and D are points on a circle of radius 8cm.

AB and AC are tangents to the circle.

AO = 11cm

Work out the length of arc BDC

$$\cos \theta = \frac{8}{11} \quad \theta = 43.34^\circ$$

$$2\theta = 86.68 \dots$$

$$\frac{273.316 \dots}{360} \times \pi \times 16 = 38.162 \text{ cm}$$

Work out the area of sector BOC

Minor sector

$$\frac{86.68 \dots}{360} \times \pi \times 8^2 = 48.4132 \text{ cm}^2$$

$$\text{Major sector } 64\pi - 48.4132 \dots$$

$$152.65 \text{ cm}^2$$