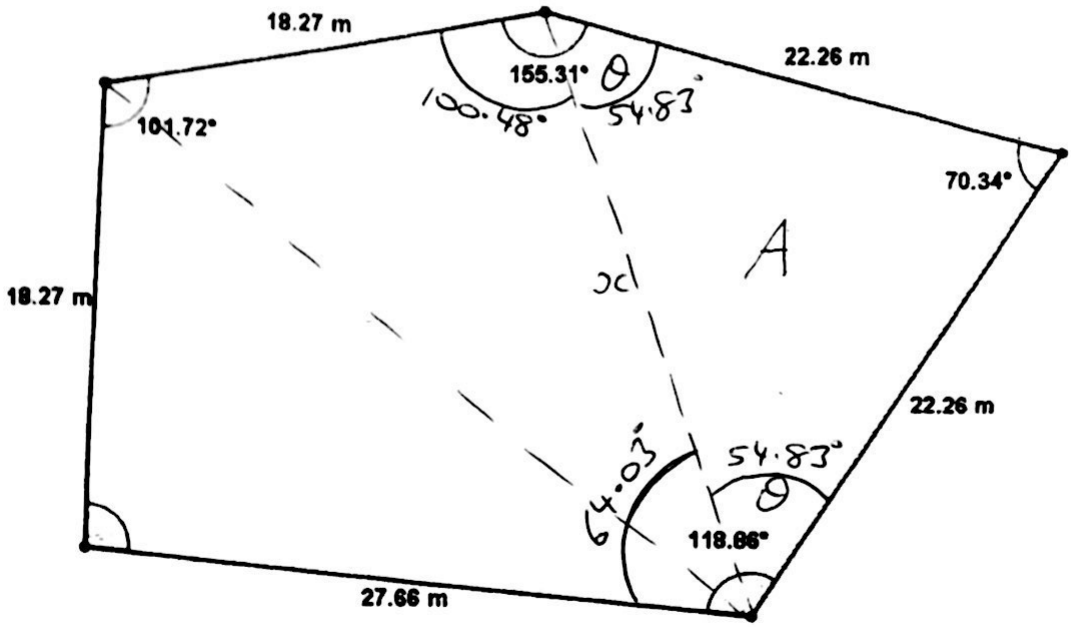
Trig (2)

The diagram below shows the plan with all available dimensions of a commercial urban site which is for sale by an auctioneer. The surveyor has measured all of the angles except one which he is unable to view because of buildings obstructing.



EDCO SAMPLE D PAPER 2

Find the measure of the missing angle.

$70.34° + 2\theta = 180°$

$\theta = 54.83°$

$155.31° - 54.83° = 100.48°$

$118.86° - 54.83° = 64.03°$

$360° - 101.72° - 100.48° + 64.03° = \boxed{93.77°}$

In $\triangle A$: $\frac{x}{\sin 70.34°} = \frac{22.26}{\sin 54.83°}$

$x = 25.64$

269 Ans : 93.77°

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(ii) Find the area of the site (i) in square metres, (ii) in hectares. Give both answers correct to two decimal places. (*Note*. 1 hectare = 10 000 m²)

Area $\triangle = \frac{1}{2}ab\sin C$

Area $= \frac{1}{2}(18.27)(27.66)\sin 93.77°$

$+ \frac{1}{2}(22.26)(22.26)\sin(70.34°)$

$+ \frac{1}{2}(18.27)(25.64)\sin 100.48°$

$= 715.75\ m^2$

$= 0.0715$ hectares

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