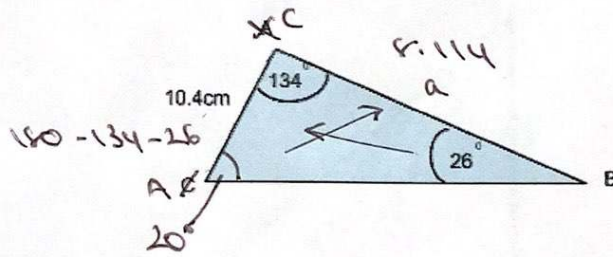




## QT The Sine Rule - word problems

1. Work out the area of triangle ABC

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



$$\frac{a}{\sin A} = \frac{b}{\sin B}$$

$$\frac{a}{\sin 20^\circ} = \frac{10.4}{\sin 26^\circ}$$

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

$$= \frac{1}{2} \cdot 8.114 \cdot 10.4 \cdot \sin 134^\circ$$

$$= 30.3515 \text{ cm}^2$$

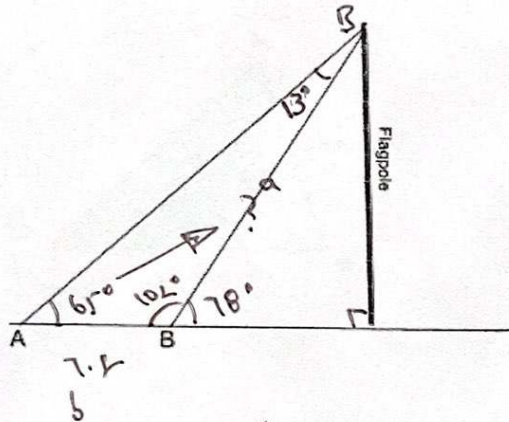
$$a = \sin 20^\circ \times \left( \frac{10.4}{\sin 26^\circ} \right)$$

$$a = 8.114$$

$$\text{Area} = \underline{\underline{30.4 \text{ cm}^2}} \text{ (1 dp)}$$



2. The diagram shows a flagpole held by 2 wire ropes. From point A, the angle of elevation to the top of the flagpole is  $65^\circ$ . From point B the angle of elevation to the top of the flagpole is  $78^\circ$ . The distance from A to B is 7.8m. Find the height of the flagpole.

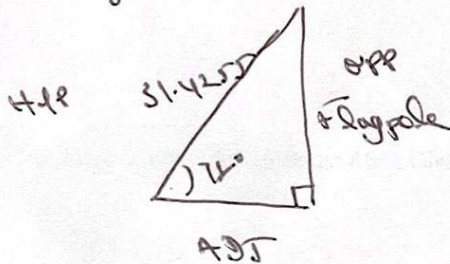


$$\frac{a}{\sin A} = \frac{b}{\sin B}$$

$$\frac{a}{\sin 65^\circ} = \frac{7.8}{\sin 13^\circ}$$

$$a = \sin 65^\circ \times \left( \frac{7.8}{\sin 13^\circ} \right)$$

$$a = 31.4255 \dots$$



SOH CAH TOA

$$\sin = \frac{\text{OPP}}{\text{HHP}}$$

$$\sin 78^\circ = \frac{\text{OPP}}{31.4255}$$

$$31.4255 \times \sin 78^\circ = \text{OPP}$$

$$30.73878 = \text{OPP}$$

$$\underline{\underline{30.74}} \text{ (1dp)}$$