

M1.6 seen

*May be on diagram*

B1

$$\tan 70 = \frac{h}{(\text{their } 6) \div 2}$$

*oe, x being an equal side of isosceles triangle*

$$\sin 20 = \frac{3}{x}$$

$$\cos 70 = \frac{3}{x}$$

$$\frac{6}{\sin 40} = \frac{x}{\sin 70}$$

M1

 $(h =) [8.2, 8.3]$ *[8.7, 8.8] eg 8.77*

A1ft

$$\frac{1}{2} \times \text{their } 6 \times \text{their } h$$

M1

$$\frac{1}{2} \times \text{their } 6 \times \text{their } 8.77 \times \sin 70$$

$$\text{or } \frac{1}{2} \times \text{their } 8.77^2 \times \sin 40$$

[24.3, 24.9]

A1ft

[5]

$$\mathbf{M2.} \tan 35 = \frac{x}{40} \text{ oe}$$

$$\frac{40}{\sin 55} = \frac{x}{\sin 35}$$

M1

40 tan 35 oe

or 28

$$\frac{40 \sin 35}{\sin 55}$$

M1dep

their 28.(...) + 1.8

M1dep

29.8...

A1

29.8 or 30

*ft is for any answer given to 2 s.f. or 3 s.f. if no evidence of incorrect rounding.*

B1ft

[5]

**M3**.tan identified

*If hypotenuse used must see*

$$\frac{16}{\cos 31} = 18.6(\dots) \text{ or } 18.7$$

$$\text{or } \frac{16}{\sin 59} = 18.6(\dots) \text{ or } 18.7$$

M1

$$\tan 31 = \frac{h}{16}$$

$$\text{or } \frac{h}{\sin 31} = \frac{16}{\sin(90-31)}$$

oe

$$h^2 + 16^2 = \text{their } 18.6^2$$

$$\text{or } h^2 = \text{their } 18.6^2 - 16^2$$

$$\text{or } \frac{h}{\sin 31} = \frac{\text{their } 18.6}{(\sin 90)}$$

M1dep

9.61(...) or 9.6

A1

[3]