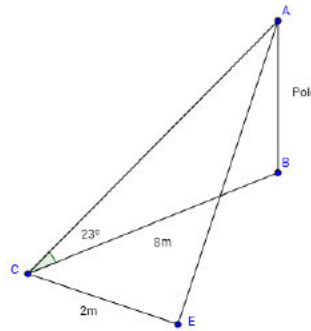
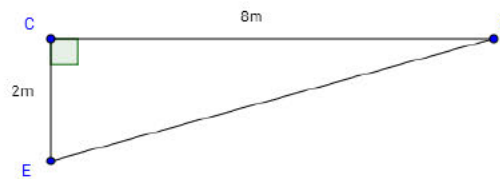


Student 2: High Merit
NZQA Intended for teacher use only

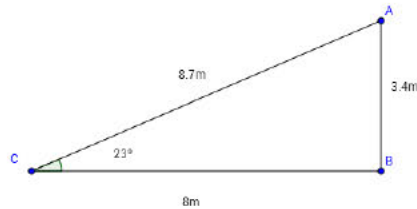
1. $\tan 23 = \frac{AB}{8}$
 $AB = \tan 23 \times 8$
 $AB = 3.4\text{m (1dp)}$



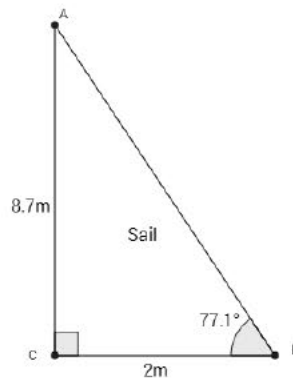
2. $AC^2 = CB^2 + AB^2$
 $AC^2 = 8^2 + 3.4^2$
 $AC = \sqrt{64 + 11.56}$
 $AC = 8.7\text{m (1dp)}$



3. $\tan E = \frac{8.7}{2}$
 $E = \tan^{-1}\left(\frac{8.7}{2}\right)$
 $E = 77.1^\circ \text{ (1dp)}$



The Sail



1

$$\sin 13 = \frac{x}{AB}$$

$$x = \sin 13 \times 3.4 = 0.76\text{m}$$

$$\cos 13 = \frac{AD}{AB}$$

$$\cos 13 = \frac{AD}{3.4}$$

$$AD = \cos 13 \times 3.4 = 3.31\text{m}$$

(2dp)

$$y^2 = AD^2 - AC^2$$

$$y = \sqrt{(10.96 - 5.76)}$$

$$y = 2.28\text{m}$$

