

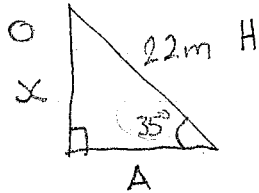
Calculating the side length

* given one angle and one side we can solve for a missing side length:

- ① Label the triangle with H, O, A
- ② Choose the appropriate trig ratio
- ③ write the formula, plug in numbers and solve

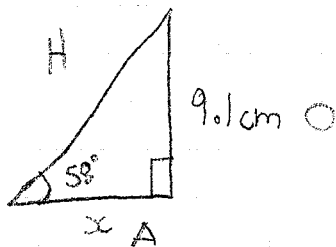
Ex. find side length x :

a)



$$\begin{aligned}\sin \theta &= \frac{O}{H} \\ \sin 35^\circ &= \frac{x}{22} \\ 22(\sin 35^\circ) &= x \\ \boxed{12.6m = x}\end{aligned}$$

b)



$$\begin{aligned}\tan \theta &= \frac{O}{A} \\ \tan 58^\circ &= \frac{9.1}{x} \\ x(\tan 58^\circ) &= 9.1 \\ \frac{x(\tan 58^\circ)}{(\tan 58^\circ)} &= \frac{9.1}{(\tan 58^\circ)} \\ \boxed{x = 5.7cm}\end{aligned}$$

⊗ When the unknown side is in the denominator there is an extra step!