

# Right angled triangles and trigonometry.

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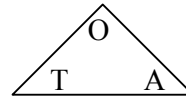
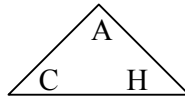
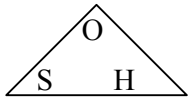
Select RUN mode from the main menu by using the arrow keys to highlight the RUN icon or pressing 1.



This worksheet shows how the calculator can be used to calculate unknown angles and sides of right angled triangles.

## Introduction

Mnemonics such as SOHCAHTOA or the use of 'triangle rules' to help the student to remember what order sides or angles are placed into formula and used / manipulated to solve.



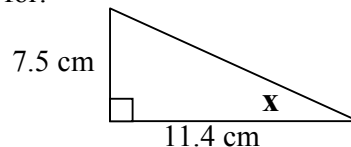
You can use the calculator if you know any of the following:

1. the acute angles and the hypotenuse or
2. the opposite and adjacent sides.

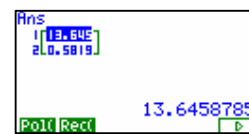
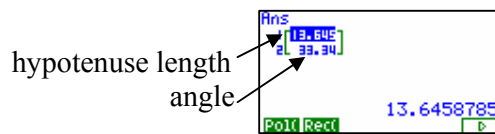
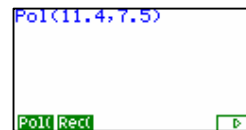
The menu trail for: Pol( and Rec( when in the RUN icon.



**Example 1:** Find the unknown angle marked 'x' for:



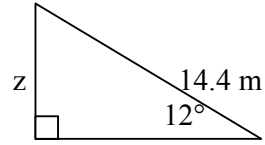
**Answer:** Select **Pol(** by pressing **F1**  
Enter in the lengths of the adjacent and opposite side lengths as a co-ordinate pair as shown: **(adj , opp)**, then press **EXE**



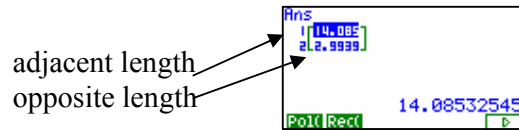
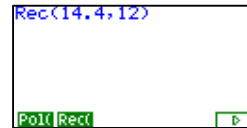
Answer  $x = 33.3^\circ$  (1dp) [or 0.58 radians]

[N.B. the 13.6458785 shown here, is the length of the hypotenuse of the given triangle.]

**Example 2:** Find the unknown side marked 'z' for:



**Answer:** Select **Rec**( by pressing **F2**  
Enter in the length of the hypotenuse  
and angle as a co-ordinate pair as shown:  
(**hyp , angle**), then press **EXE**

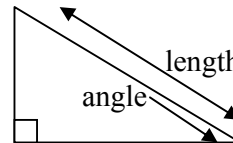


Answer  $z = 2.99$  m (2dp)

[N.B. The 14.08532545 shown here, is the length of the adjacent side of the given triangle.]

**Pol**( means POLAR FORMAT and is given by the length of the 'vector' and the angle that it makes with the horizontal.

and



**Rec**( means POLAR FORMAT and is given by the length of the horizontal and vertical components of the 'vector'.

