

Worksheet 3-5: Solving Right Triangles

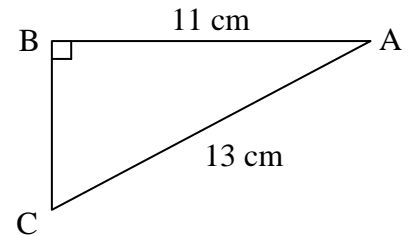
To **solve** a right triangle means to find all the unknown side lengths and unknown angles of a given right triangle.

Since each trigonometric ratio involves 3 pieces of information (**one** _____ **and two** _____). Two of the three pieces of information must be given to find the unknown information.

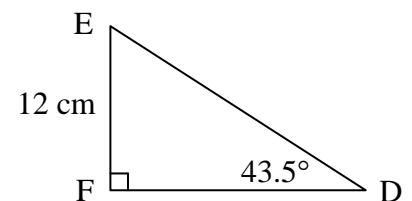
Identify the given information for the 2 cases below and solve the right triangles.

Solving a right triangle, given two sides only

1. Solve $\triangle ABC$. Find side lengths to the nearest tenth of a centimetre and angles to the nearest degree.

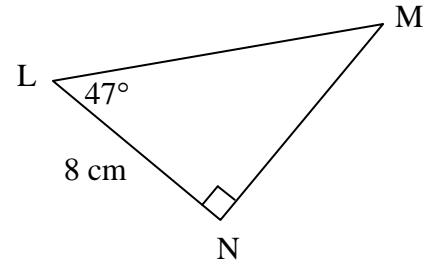
**Solving a right triangle, given one acute angle and one side**

2. Solve $\triangle DEF$. Find side lengths to the nearest tenth of a centimetre.

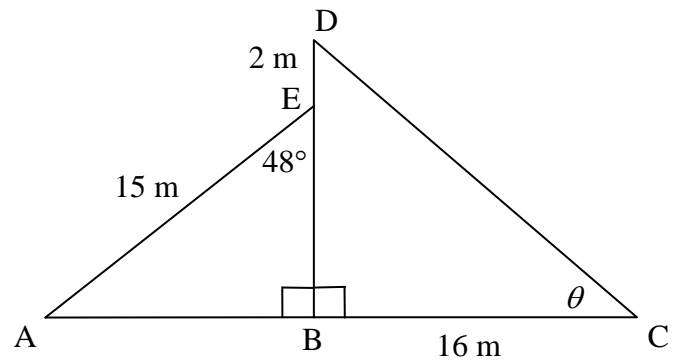


Practice:

3. Solve $\triangle LMN$. Find side lengths to the nearest tenth of a centimetre.



4. Find θ , to the nearest degree.



Answers: 1. $BC = 6.9$ cm, $\angle A = 32^\circ$, $\angle C = 58^\circ$; 2. $DF = 17.4$ cm, $DE = 12.6$ cm, $\angle F = 46.5^\circ$;
 3. $\angle C = 43^\circ$, $LM = 11.7$ cm, $MN = 8.6$ cm; 4. $\theta = 37^\circ$