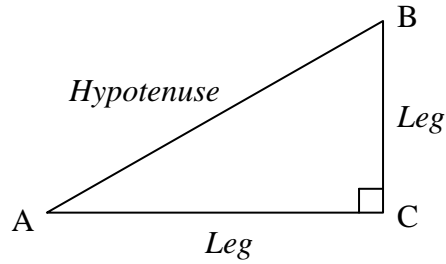


**Worksheet 1-2: Solving a Right Triangle**

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

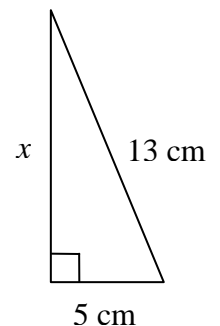
Since each trigonometric ratio involves 3 pieces of information (**one** \_\_\_\_\_ **and two** \_\_\_\_\_). **Two of the three pieces of information** must be given to find the unknown information.

**Properties of Right Triangle****I. Triangle Sum Theorem****II. Complementary Angles****III. Pythagorean Theorem:  $c^2 = a^2 + b^2$** 

$c$  is the \_\_\_\_\_.  $a$  and  $b$  are the \_\_\_\_\_.

**Practice:**

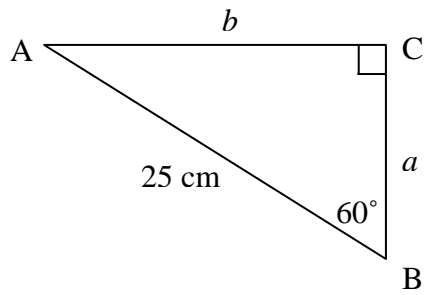
1. Find the measure of the unknown side, round to the nearest tenth of a centimetre.



**Case 1: Solving a right triangle, given** \_\_\_\_\_

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

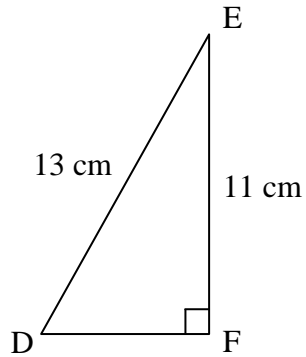
*(Hint: Always try to use the known values that are given to find the unknown values to avoid errors.)*



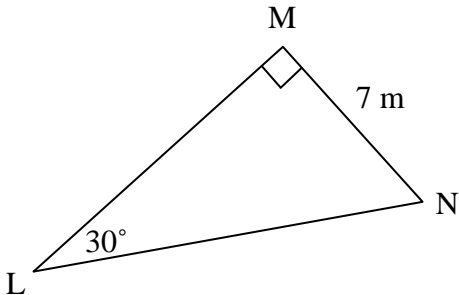
**Case 2: Solving a right triangle, given** \_\_\_\_\_

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

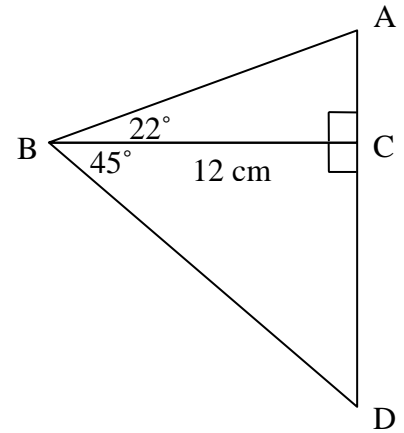
(Hint: Always try to use the known values that are given to find the unknown values to avoid errors.)



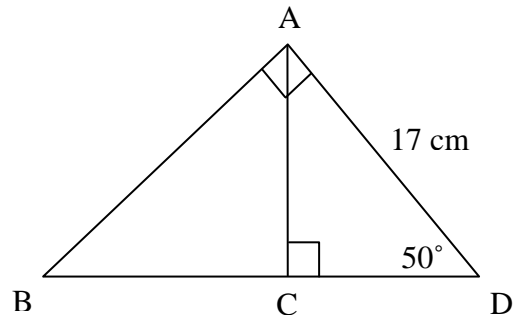
2. Solve  $\triangle LMN$ . Find side lengths to the nearest tenth of a metre and angles to the nearest degree.



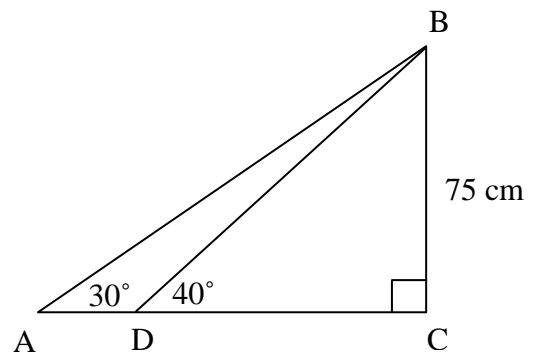
3. Find the measure of AD, to the nearest tenth of a metre.



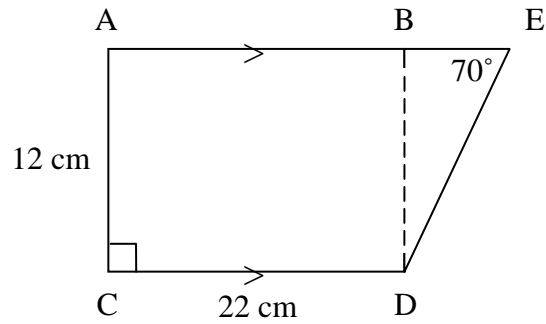
4. Find the measure of BC, to the nearest tenth of a metre.



5. Find the measure of AD, to the nearest tenth of a centimetre.



6. Find the area of the trapezoid, to the nearest square centimetre.

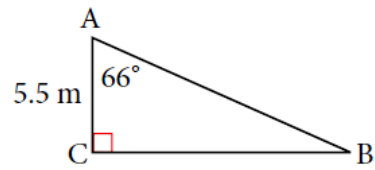


**Answers:** 1. 12 cm; **Case 1:**  $\angle A = 30^\circ$ ,  $a = 12.5$  m,  $b = 21.7$  m; **Case 2:**  $DF = 6.9$  cm,  $\angle E = 32^\circ$ ,  $\angle D = 58^\circ$ ;  
 2.  $\angle N = 60^\circ$ ,  $LM = 12.1$  m,  $LN = 14$  m; 3. 16.8 m; 4. 15.5 m; 5. 40.5 cm; 6. 290 cm<sup>2</sup>.

**Practise**

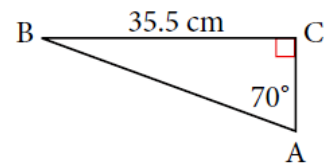
6. a) Find the measure of the hypotenuse.

b) Find the measure of side  $a$ .



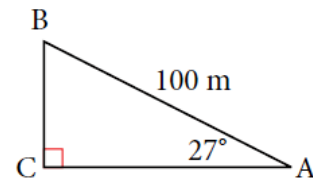
7. a) Find the measure of side  $b$ .

b) Find the measure of side  $c$ .

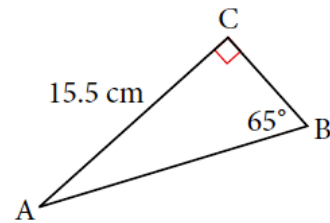


8. a) Find the measure of side  $a$ .

b) Find the measure of side  $b$ .



9. Solve  $\triangle ABC$ .



**Answers**

6. a)  $x = 3$                       b)  $x = 3$                       c)  $x = 20, y = 4$

7. a) 1 unit of distance on the map represents 700 000 of the same unit of distance on the earth.

b) 84 km

c) 5.7 cm

8. a) 3.46                              b) 19.83                              c) 9015.98

9. a) 7.7                                b) 26.9                                c) 0.9