

Name: \_\_\_\_\_

Date: \_\_\_\_\_

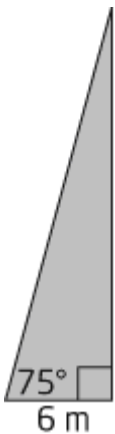
**Foundations of Math 10 LG 15 Ver A**

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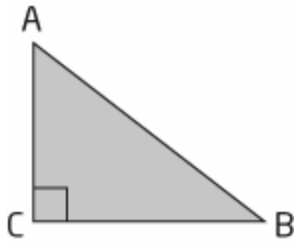
**Expectation #1 Use the sine, cosine and tangent ratio to solve problems in right triangles.**

1. A right triangle has one side measuring 6 cm. The length of the hypotenuse is 10 cm. Draw a diagram of the triangle and calculate the length of the missing side. (2 marks)

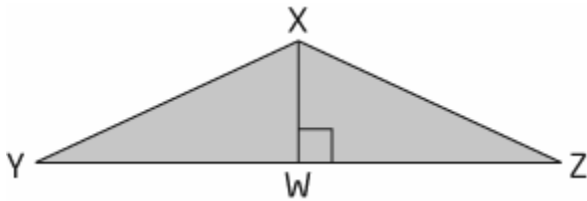
2. A telephone pole is secured with a guy wire as shown in the diagram. The guy wire makes an angle of  $75^\circ$  with the ground and is secured to the ground 6 m from the bottom of the pole. Determine the height of the telephone pole, to the nearest tenth of a metre. (3 marks)



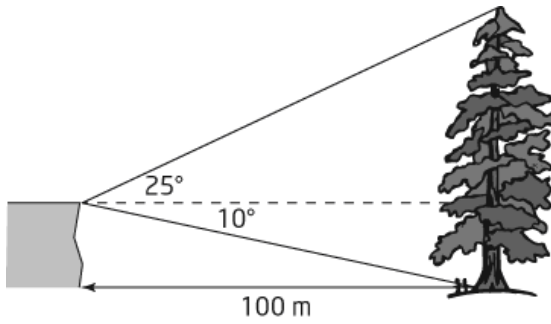
3. In  $\triangle ABC$ , the side  $AC$  is 15 cm, and  $\angle B$  is  $25^\circ$ . How long is  $AB$ , to the nearest centimetre?  
(3 marks)



4. In  $\triangle XYZ$ ,  $XY$  and  $XZ$  have equal lengths of 6 cm.  $YZ$  is 10 cm. Determine the measure of  $\angle X$ , to the nearest degree. (3 marks)



5.

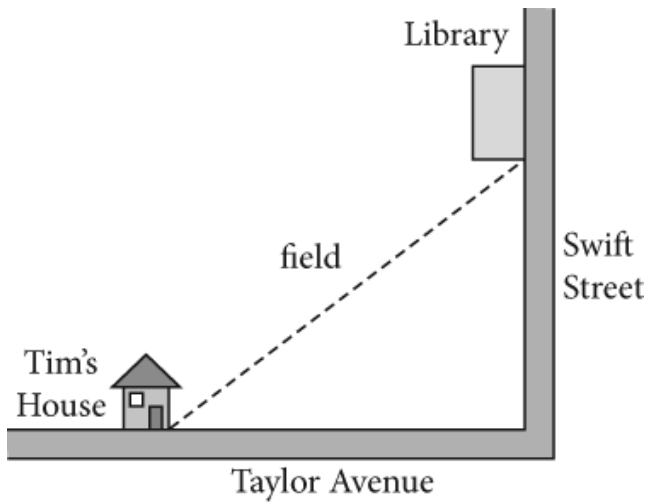


A rock face is 100 m from the base of a California redwood tree. The angle of elevation from the top of the rock face to the top of the tree is  $25^\circ$ . The angle of depression to the bottom of the tree is  $10^\circ$ . (4 marks)

a) Determine the height of the rock face, to the nearest tenth of a metre.

b) Determine the height of the tree, to the nearest tenth of a metre.

6. Tim lives on Taylor Avenue, 500 m west of where it intersects with Swift Street. The library is on Swift Street, north of the intersection. (5 marks)



- a) When Tim goes from his house to the library, he walks diagonally across a field at an angle of  $30^\circ$  to Taylor Avenue. How far does Tim walk if he takes this route? Answer to the nearest tenth of a metre.
- b) If Tim decides to walk from his house to the library along the streets, how far does he travel? Answer to the nearest tenth of a metre.
- c) Determine which route is shorter, and by how much.