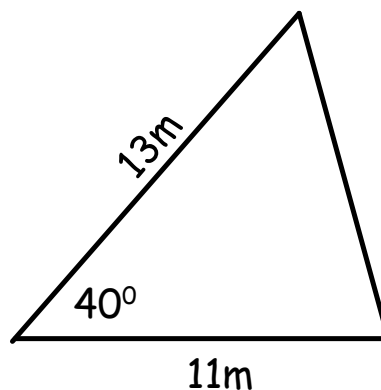


## **5.2 - Solving Problems by Using Right-Triangle Models**

Example 1: A surveyor stands at point  $S$  and uses a laser transit and marking pole to sight two corners,  $A$  and  $B$ , on one side of a rectangular lot. The surveyor marks a reference point  $P$  on the line  $AB$  so that the line from  $P$  to  $S$  is perpendicular to  $AB$ . Corner  $A$  is 150 m away from  $S$  and  $34^\circ$  west of  $P$ . Corner  $B$  is 347 m away from  $S$  and  $69^\circ$  east of  $P$ . Find the length of the lot.

Example 2: Joelle's parents have a house with a triangular front lawn as shown. They want to cover the lawn with sod rather than plant grass seed. How much would it cost to put sod if it costs \$13.75 per square metre?



Example 3: A communications tower is some distance from the base of a 70 m high building. From the roof of the building, the angle of elevation to the top of the tower is  $11.2^\circ$ . From the base of the building, the angle of elevation to the top of the tower is  $33.4^\circ$ . Determine the height of the tower and how far it is from the base of the building. Round your answers to the nearest metre.

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