

Pre-Calculus 11 - VLN

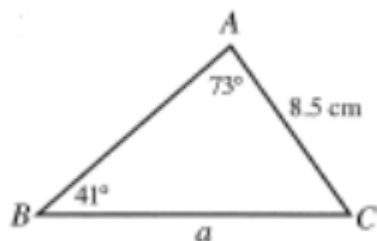
Chapter 6: Trigonometry

Lesson 2: Sine Law

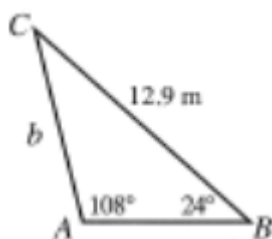
Question #1

Reference Q.13316

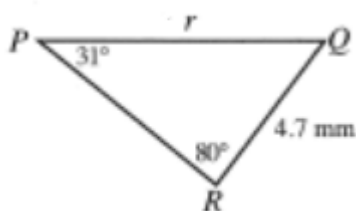
In each case, find the length of the indicated side to the nearest tenth.



a.



b.

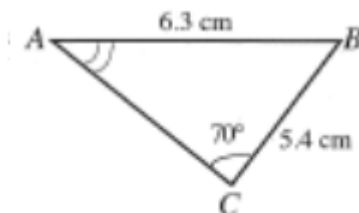


c.

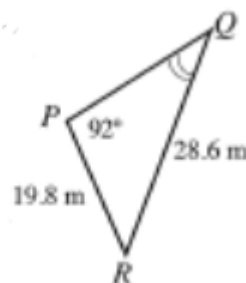
Question #2

Reference Q.13317

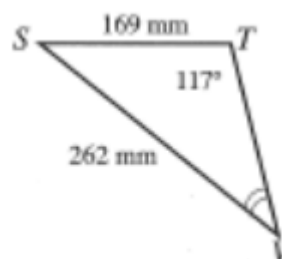
In each case, find the measure of the indicated angle to the nearest degree.



a.



b.



c.

Question #3

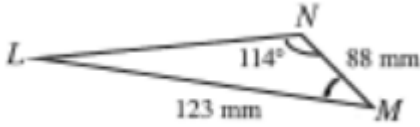
Reference Q.13318

In $\triangle ABC$, $\angle A = 49^\circ$, $\angle B = 57^\circ$, and $a = 8$. Calculate b to the nearest tenth.

Question #4

Reference Q.13319

In $\triangle LMN$, $\angle LNM = 114^\circ$, $LM = 123\text{mm}$, and $MN = 88\text{mm}$. Calculate $\angle LMN$, to the nearest degree.



Question #5

Reference Q.13322

In triangle PQR , $\angle P = 20^\circ$, $\angle R = 150^\circ$, and $QR = 6\text{m}$. The length of PQ is

- A. 4.1 m
- B. 8.8 m
- C. 15.2 m
- D. 17.3 m

Question #6

Reference Q.13323

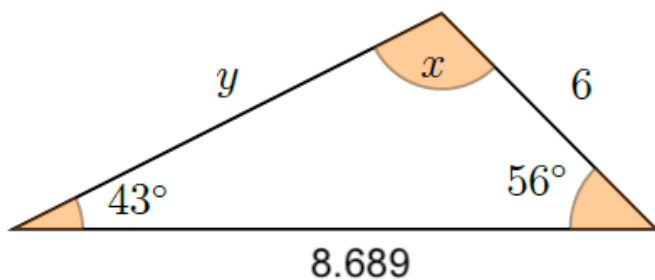
In $\triangle ABC$, $\angle A = 30^\circ$, $BC = 10$ units and $AC = 15$ units. If $\angle B$ is acute-angled, then $\angle C$ is

- A. 19.4°
- B. 48.6°
- C. 101.4°
- D. 130.6°

Question #7

Reference Q.17979

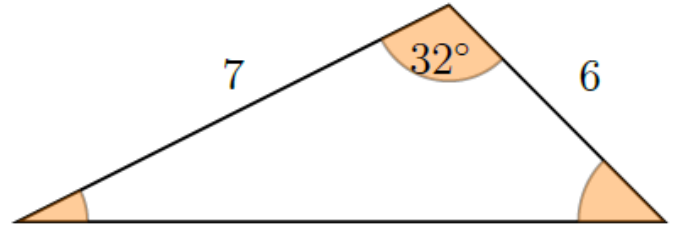
Determine if the following triangle can be solved using Sine law. If so, assume the angle x is an acute angle and solve the triangle. If not, explain why the Sine law can't be used.



Question #8

Reference Q.17980

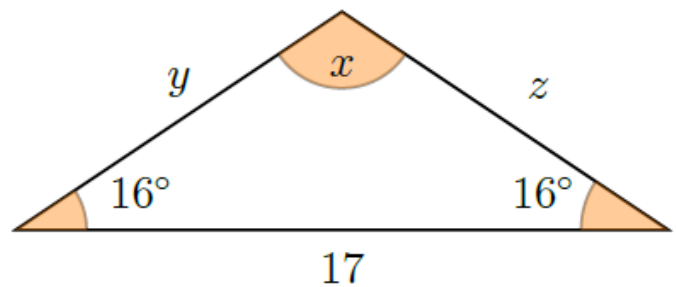
Determine if the following triangle can be solved using Sine law. If so, solve the triangle. If not, explain why the Sine law can't be used.



Question #9

Reference Q.17981

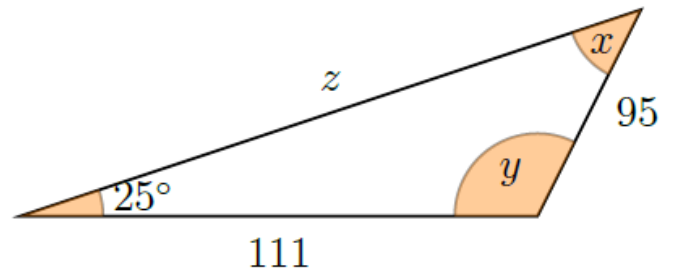
Solve the following triangle using the Sine law.



Question #10

Reference Q.17982

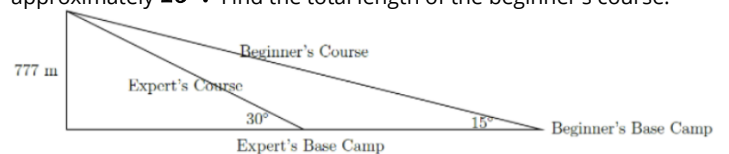
Solve the following triangle using Sine law. (Assume y is an obtuse angle.)



Question #11

Reference Q.17983

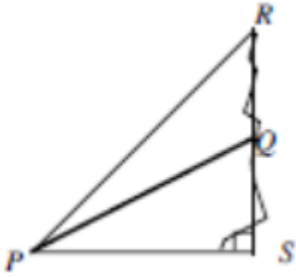
The height of a mountain in a ski resort, is about 777 m. There are two main courses in this resort: Expert's course and Beginner's course. The angle of elevation from the base camp of the expert's course to the top of the mountain is approximately 30° . The angle of elevation from the base camp of the beginner's course to the top of the mountain is approximately 15° . Find the total length of the beginner's course.



Question #12

Reference Q.13320

P and Q are two bases for a mountain climb. PQ is 600 m and QR is a vertical stretch of a rock face. The angle of elevation of Q from P is 31° , and the angle of elevation of R from P is 41° .

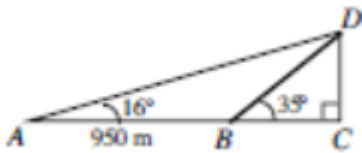


- Mark these measurements on the diagram and state the measure of angle PRQ .
- Use the sine law in $\triangle PQR$ to calculate the height of the vertical climb, QR , to the nearest metre.

Question #13

Reference Q.13324

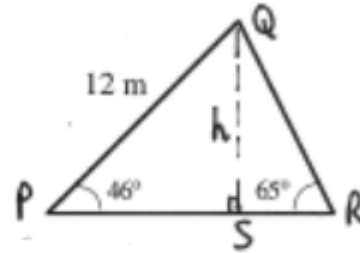
From a point A , level with the foot of a hill, the angle of elevation of the top of the hill is 16° . From a point B , 950 metres nearer the foot of the hill, the angle of elevation of the top is 35° . The height of the hill, DC , to the nearest metre, is ____.



Question #14

Reference Q.13321

Three students are trying to determine the area of the triangle in the diagram. Each student is given a different formula with which to determine the area. The area of the triangle is $53.3m^2$.



Show how each student arrived at this answer.

- Student #1: Use the formula $A = \frac{1}{2}bh$, where b is the length of the base and h is the vertical height.
- Student #2: Use Heron's formula $A = \sqrt{s(s-a)(s-b)(s-c)}$, where a , b , and c are the lengths of the three sides and s is the semi-perimeter of the triangle.
- Students #3: Use the formula $A = \frac{1}{2}ab \sin C$, where a and b are the lengths of two sides and angle C is the contained angle between the sides a and b .