

Formulas Provided
$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$
$a^2 = b^2 + c^2 - 2cb \cos A$
$\cos A = \frac{b^2 + c^2 - a^2}{2cb}$

Part 1: MULTIPLE CHOICE

(6 marks)

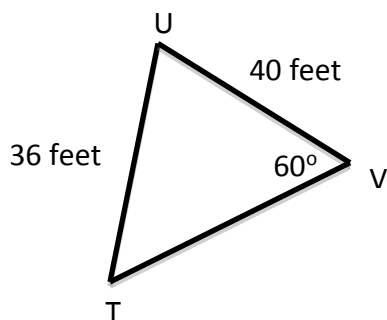
Place the letter of the correct response in the space provided. Use UPPER CASE letters only!

1. What is the value of t given: $\frac{\sin 58.4^\circ}{15} = \frac{\sin 36.1^\circ}{t}$? 1. _____

- A. 7.3 B. 10.4 C. 11.0 D. 21.7

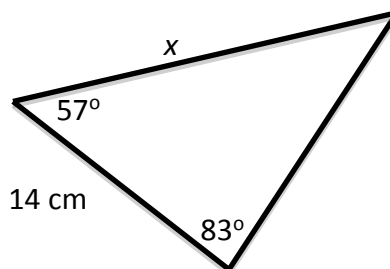
2. Given the diagram below, what is the measure of $\angle T$ to the nearest degree? 2. _____

- A. 74
B. 46
C. 120
D. 66



3. Which proportion is correctly set up to solve for x in the diagram below? 3. _____

- A. $\frac{x}{\sin 57^\circ} = \frac{14}{\sin 83^\circ}$
B. $\frac{14}{\sin 57^\circ} = \frac{x}{\sin 83^\circ}$
C. $\frac{x}{\sin 83^\circ} = \frac{14}{\sin 40^\circ}$
D. $\frac{x}{\sin 40^\circ} = \frac{14}{\sin 57^\circ}$



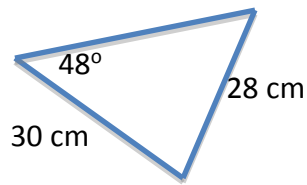
4. Given the following: $\cos Z = \frac{15^2 + 18^2 - 12^2}{2(15)(18)}$, what is $\angle Z$ to the nearest degree? 4. _____

- A. 41
B. 49
C. 0.75
D. 4

5. Given the diagram below, what is the measure of the largest angle to the nearest degree?

5. _____

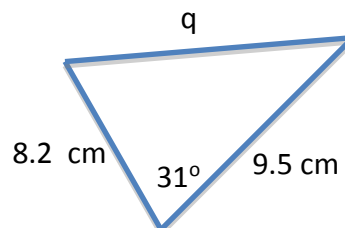
- A. 48
B. 53
C. 79
D. 88



6. What is the value of q to the nearest tenth of a centimeter?

6. _____

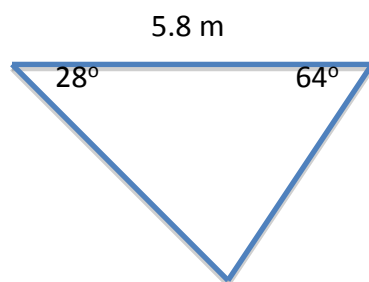
- A. 1.2
B. 1.4
C. 4.9
D. 8.8



Part 2: CONSTRUCTED RESPONSE

For each question, round angles to the nearest degree and round sides to one decimal place. Show all necessary workings, as credit will not be given for answers only.

1. Terry is designing a triangular patio as shown. What is the perimeter of the patio? (4 marks)



2. In $\triangle PQR$, $p = 41$ cm, $r = 30$ cm, and $\angle Q = 39^\circ$. Solve $\triangle PQR$. Your solution must include a diagram. (5 marks)

3. A scuba diver is floating at the surface of the water and observes a sunken boat directly below her as shown in the diagram below. The wreck is 120 meters long and $\angle RST = 68^\circ$. How far is the diver above the wreck, x ? (4 marks)

