

SHOW ALL WORK

Solve $\triangle ABC$. Give lengths to the nearest tenth and angles to the nearest minute.

1. $B=115^\circ$, $A=18^\circ$, $a=4$

2. $B=74^\circ 54'$, $C=47^\circ 38'$, $a=400$

Make a sketch and solve each of the following.

3. Two ranger stations located 10 km apart receive a distress call from a camper. Electronic equipment allows them to determine that the camper is at an angle of 71° from the first station and 100° from the 2nd, each angle having one side the line segment connecting the stations. Which station is closer to the camper? How far is it ?
4. A tower 25m high stands at the top of a cliff. The lines of sight from a ship at point C to point A and B make angles of 18° and 14° , respectively with the horizontal. Find BD, the height of the cliff.

Find the indicated part of $\triangle ABC$. Give lengths to the nearest tenth and angles to the nearest minute.

5. $a=5, b=21, C=60^\circ$ $c=$

6. $a=7\sqrt{2}, c=17, B=135^\circ$ $b=$

7. $a=15, b=9, c=21$ $C=$

8. $a=8, b=15, c=13$ $A=$

Given θ in standard position with terminal side of θ passing through the given point, find the required function.

9. $(8,6) \sec \theta$

10. $(-1,7) \cos \theta$

Given θ in standard position terminating in the given quadrant, find $\cot \theta, \sec \theta$, and $\csc \theta$.

11. $\cos \theta = \frac{3}{7}, \text{IV}$

12. $\sin \theta = -\frac{4}{5}, \text{III}$

Evaluate. Exact values only, show all work.

13. $\tan 180^\circ + \cot 90^\circ - \cot 45^\circ$

Find the exact values for each of the following (no decimal answers).

14. $\sin 120^\circ$

15. $\tan(-150^\circ)$

16. $\cos(-210^\circ)$

17. $\tan(-45^\circ)$