

Precalculus

6.1 Law of Sines (Given AAS or ASA)

Name _____ Period _____

Draw the triangle and label information given for each problem. (Assume standard naming convention. Solve for each stated side or angle measure. Show all work including formulas. Specify units. Round to four decimal places.

1. In $\triangle ABC$, $m\angle A = 33^\circ$, $m\angle B = 29^\circ$,
and $b = 41$ mi.

a) Find a .

b) Find $m\angle C$.

c) Find c .

2. In $\triangle ABC$, $m\angle A = 49^\circ$, $m\angle B = 57^\circ$,
and $a = 8$ ft.

a) Find b .

b) Find $m\angle C$.

c) Find c .

3. In $\triangle ABC$, $m\angle A = 52^\circ$, $m\angle B = 31^\circ$,
and $a = 8$ in.

a) Find b .

b) Find $m\angle C$.

c) Find c .

4. In $\triangle JAW$, $m\angle J = 48^\circ$, $a = 5$ m,
and $m\angle W = 73^\circ$.

a) Find $m\angle A$.

b) Find j .

c) Find w .

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5. In $\triangle ALP$, $m\angle A = 85^\circ$, $p = 30$ in,
and $m\angle L = 87^\circ$.

a) Find $m\angle P$.

b) Find a .

c) Find l .

6. In $\triangle LAW$, $m\angle L = 2^\circ$, $a = 500$ cm,
and $m\angle W = 3^\circ$.

a) Find $m\angle A$.

b) Find l .

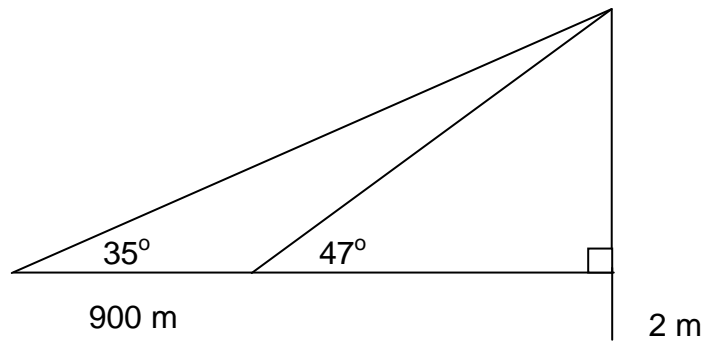
c) Find w .

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7. To measure the height of a mountain, a surveyor takes two sightings of the peak at a distance of 900 meters apart on a direct line to the mountain. The first observation results in an angle of elevation of 47° and the second results in angle of elevation of 35° . If the transit is 2 meters high, what is the height h of the mountain?



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8. Coast Guard Station Zulu is located 120 miles due west of Station X-ray. A ship at sea sends an SOS call that is received by each station. The call to Station Zulu indicates that the bearing of the ship from Zulu is 40° east of north. The call to Station X-ray indicates that the bearing of the ship from X-ray is 30° west of north. How far is each station from the ship?

