Math 3 Name: _____

Unit 3.1 Law of Sines using AAS & ASA and Area of Triangle PRACTICE

Determine the remaining sides and angles of each triangle ABC.

#1 B = 107°, C = 11°, a = 0.9 A = _____ (1 pt), b = _____ (1 pt), c = _____ (1 pt)

#2 A = 29.7°, C = 92°, b = 16.4 B = _____ (1 pt), a = _____ (1 pt), c = _____ (1 pt)

#3 A = 80°, B = 30°, b = 14 C = _____ (1 pt), a = _____ (1 pt), c = _____ (1 pt)

#4 A = 60°, B = 40°, AB = 12 C = _____ (1 pt), AC = _____ (1 pt), BC = _____ (1 pt)

#5 A = 55°, C = 40°, BC = 19 B = _____ (1 pt), AB = _____ (1 pt), AC = _____ (1 pt)

Find the area of each triangle ABC.

#6 A = 110°, b = 6, c = 7 Area = _____ (1 pt)

#7 B = 58.3°, a = 9.6, c = 19.3 Area = _____ (1 pt)

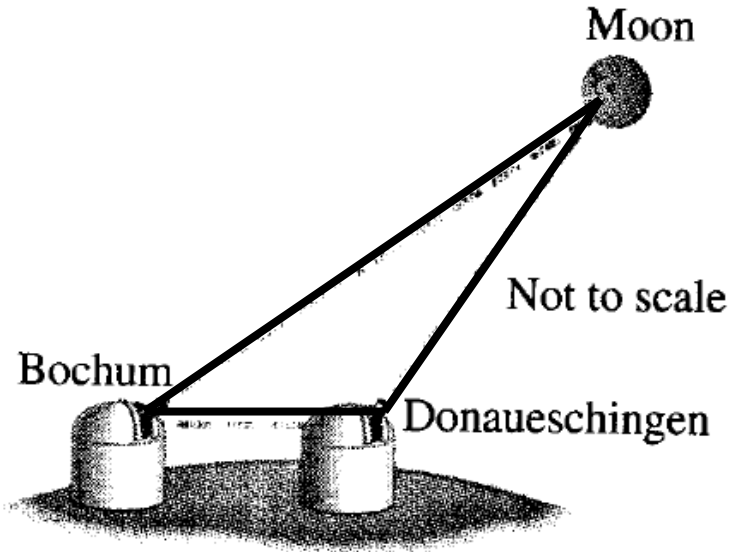
#8 C = 70°, a = 27.6, b = 14 Area = _____ (1 pt)

#9 C = 112.90°, A = 31.10°, b = 347.6 Area = _____ (1 pt)

#10 B = 65°, BC =10.8, AB = 19.7 Area = _____ (1 pt)

#11 A = 54°, AC =25, AB = 21.3 Area = _____ (1 pt)

#12 The lunar angles of elevation at Bochum in upper Germany measured as 52.6997° and in Donaueschingen in lower Germany measured as 52.7430°. The two cities are 398 km apart. Calculate the distance to the moon from Bochum. Disregard the curvature of Earth in this calculation.

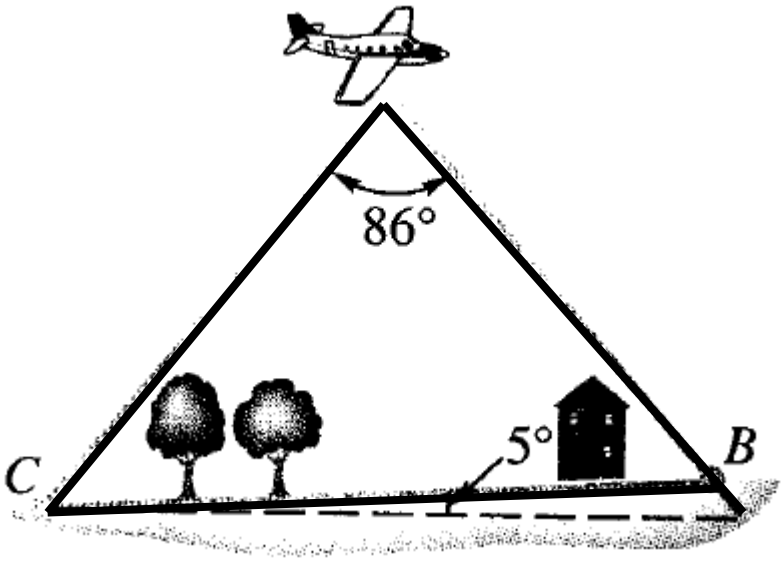


Answer = _____ (2 pt)

#13 A real estate agent wants to find the area of a triangular lot. A surveyor takes measurements and finds that two sides are 52.1 m and 21.3 m, and the angle between them is $42.2°$. What is the area of the triangular lot?

Answer = _____ (2 pt)

#14 A camera with a 6 inch focal length has an angular coverage of $86°$. Suppose an aerial photograph is taken vertically with no tilt at an altitude of 3500 ft over ground with an increasing slope of $5°$, as shown in the figure. Calculate the ground distance CB that would appear in the resulting photograph.



Answer = _____ (2 pt)

#15 The bearing of a lighthouse from a ship was found to be N $37°$ E. After the ship sailed 2.5 mi due south, the new bearing was N $25°$ E. Find the distance between the ship and the lighthouse at each location.

1st location = _____ (2 pt)

2nd location = _____ (2 pt)

#16 A painter is going to apply a special coating to a triangular metal plate on a new building. Two sides measure 16.1 m and 15.2 m. She knows that the angle between these sides is $125°$. What is the area of the surface she plans to cover with the coating?

Answer = _____ (2 pt)

Challenge question!

#17 Triangle ABC has angle A = $32°50'$, and side lengths c = 604 yds, and b = 582 yds.
Solve for angles B and C and side length a. Then find the area of the triangle.

B = _____ (1 pt), C = _____ (1 pt), a = _____ (1 pt)

Area = _____ (2 pt)