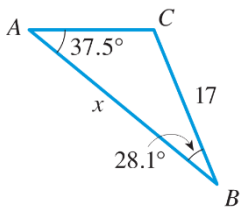
PMT0201 Tutorial 2 (Part 3)

Q1 In which of the following cases can we use the Low of Sines and/or Low of Cosines to solve a triangle:

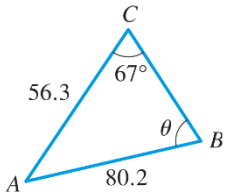
ASA, SSS, SAS, SSA,

Q2 Use the Law of Sines to find the indicated side of x and angle θ

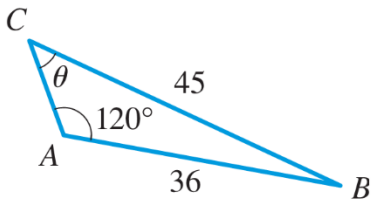
a)



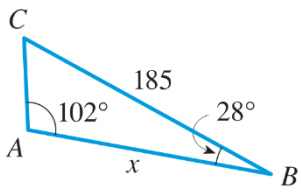
b)



c)

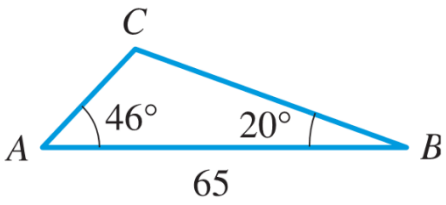


d)

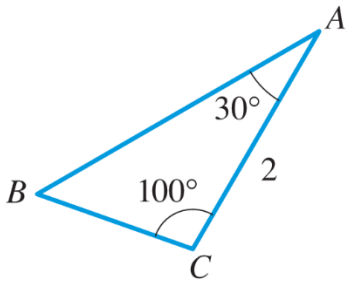


Q3 Solve the triangle using the Law of Sines

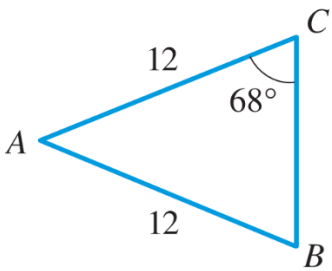
a)



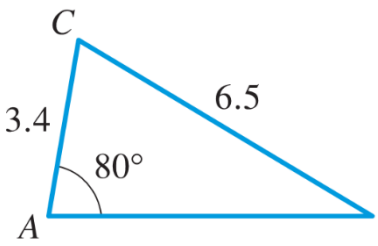
b)



c)



d)



Q4 Sketch the triangle, use Law of Sines to solve all possible triangles that satisfy the given conditions

a) $\angle A = 23^\circ,\ \angle B = 110^\circ,\ c = 50$

b) $\angle A = 30^\circ,\ \angle C = 65^\circ,\ b = 10$

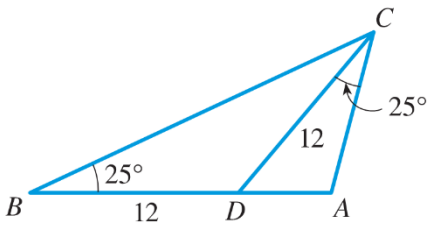
c) $\angle B = 10^\circ,\ \angle C = 100^\circ,\ c = 115$

d) $a = 30,\ c = 40,\ \angle A = 37^\circ$

e) $b = 45,\ c = 42,\ \angle C = 38^\circ$

f) $a = 50,\ b = 100,\ \angle A = 50^\circ$

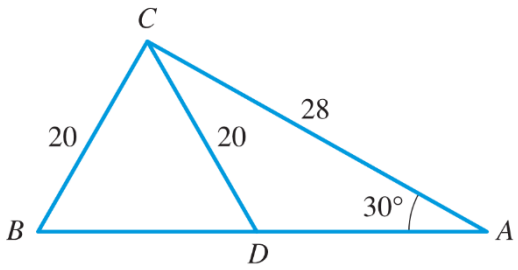
Q5 For the triangle shown, find the length AD



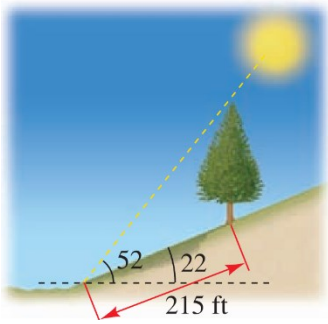
Q6 For the triangle shown, find

a) $\angle BCD$ and $\angle DCA$

b) The area of DCA

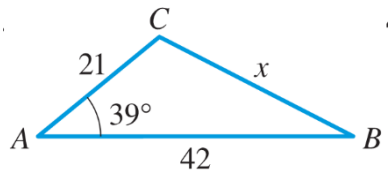


Q7 A tree on a hillside casts a shadow 215 ft down the hill. If the angle of inclination of the hillside is 22° to the horizontal and the angle of elevation of the sun is 52°, find the height of the tree.

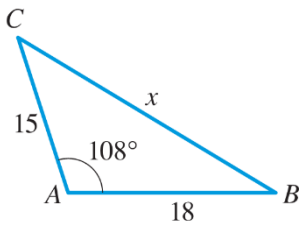


Q8 Use the Law of Cosine to determine the indicated side x or angle θ

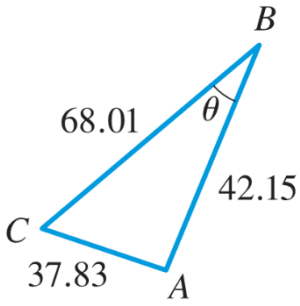
a)



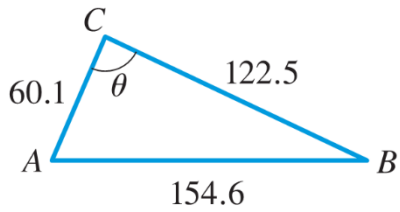
b)



c)

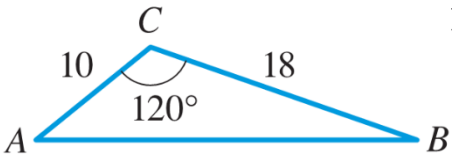


d)

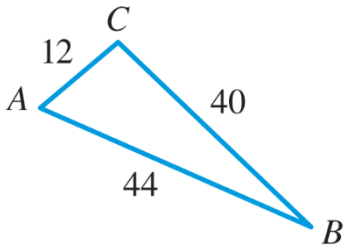


Q9 Solve triangle ABC.

a)



b)

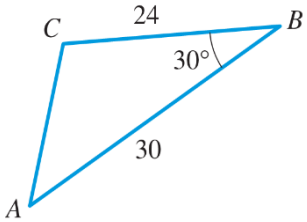


c) $a = 20,\quad b = 25,\quad c = 22$

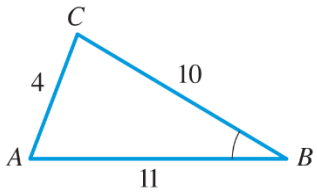
d) $a = 50,\quad b = 65,\quad \angle A = 55^{\circ}$

Q10 Find the area of triangle given below

a)

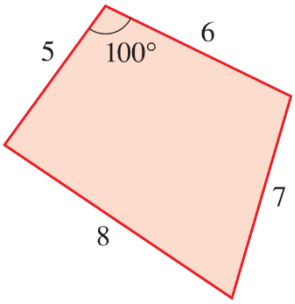


b)

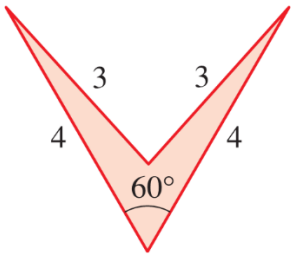


Q11 Find the area of the shaded figure rounded to two decimals

a)



b)



Q12 A fisherman leaves his home port and heads in the direction $N\,70^{o}\,W$. He travels 30 mi and reaches Egg Island. The next day he sails $N\,10^{o}\,E$ for 50 mi, reaching Forrest Island.

a) Find the distance between the fisherman's home port and Forrest Island

b) Find the bearing from Forrest Island back to his home port