Math 3 Name: ______________________________

Unit 3.3 Law of Cosines using SAS & SSS, & Heron's Formula PRACTICE

Solve each triangle ABC and the area.

#1 A = 61°, b = 4, c = 6

B = _________(1 pt) C = _________(1 pt) a = _________(1 pt) Area = _________(1 pt)

#2 A = 121°, b = 5, c = 3

B = _________(1 pt) C = _________(1 pt) a = _________(1 pt) Area = _________(1 pt)

#3 a = 4, b = 10, c = 8

A = _________(1 pt) B = _________(1 pt) C = _________(1 pt) Area = _________(1 pt)

#4 a = 12, b = 10, c = 10

A = _________(1 pt) B = _________(1 pt) C = _________(1 pt) Area = _________(1 pt)

#5 B = 43°, a = 91, c = 88

A = _________(1 pt) C = _________(1 pt) b = _________(1 pt) Area = _________(1 pt)

#6 C = 121°, a = 3, b = 3

A = _________(1 pt) B = _________(1 pt) c = _________(1 pt) Area = _________(1 pt)

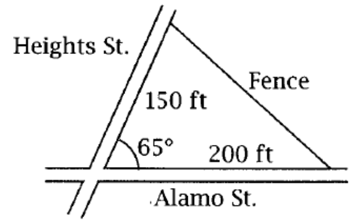
#7 C = 15°, a = 6.25, b = 2.15

A = _________(1 pt) B = _________(1 pt) c = _________(1 pt) Area = _________(1 pt)

#8 a = 4.4, b = 3.8, c = 5.2

A = _________(1 pt) B = _________(1 pt) C = _________(1 pt) Area = _________(1 pt)

#9 Lot Area Problem: Sean works for a real estate company. The company has a contract to sell the triangular lot at the corner of Alamo and Heights Streets (see drawing below). The streets intersect at a $65°$ angle. The lot extends 200 ft from the intersection along Alamo and 150 ft from the intersection along Heights.



a. Find the area of the lot. area = ________________________ (2 pt)

b. Land in the neighborhood is valued at $35,000 per acre. An acre is 43,560 square feet. How much is the lot worth? Lot worth = ____________________ (1 pt)

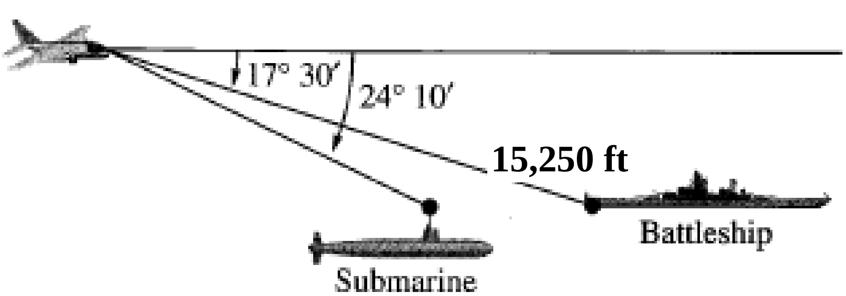
c. The real estate company will earn a commission of 6% of the sales price. If the lot sells for what it is worth, how much will the commission be? Commission worth = ______________ (1 pt)

d. A fence company will be putting in a fence along the back of the lot from Heights street to Alamo street. How long will the fence be? Fence length = ___________________ (2 pt)

e. How much will it cost the fence company to build the fence if it cost $3.75 per foot? Cost to build = ___________________ (1 pt)

f. If the fence company is to make a 35% profit from building the fence, what should the quote price be to the customer? Quote price = _____________________ (1 pt)

#10 Distance Between a ship and a submarine: From an airplane flying over the ocean, the angle of depression to a submarine lying under the surface is $24°10'$. At the same moment, the angle of depression from the airplane to a battleship is $17°30'$. (See the figure below.) The distance from the airplane to the battleship is 15, 250 ft. Find the distance between the battleship and the submarine. (Assume the airplane, submarine, and the battleship are in a vertical plane.)



a. Distance from submarine to battle ship = ________________________ (5 pt)