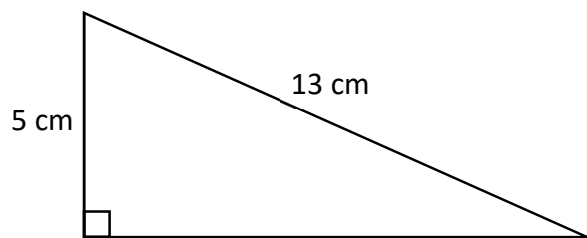# Applied Math 30S

Name: _____

Trigonometry Hand-In Assignment 3

Complete the following questions (on this page or on separate paper for more room) and hand in this assignment when finished. Round answers to **two decimal places** if necessary.

Formulas: $\qquad a^2 + b^2 = c^2 \qquad\qquad \sin\theta = \dfrac{o}{h} \qquad \cos\theta = \dfrac{a}{h} \qquad \tan\theta = \dfrac{o}{a}$

1. Solve the following triangle. SHOW ALL WORK in the space provided.

2. Solve the following triangle. SHOW ALL WORK in the space provided.
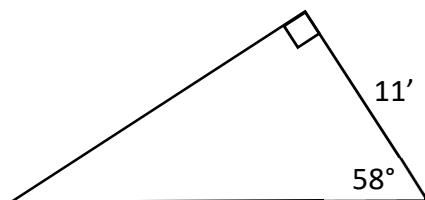
3. Alexis wanted to convert half of his backyard space into a community garden. His yard is a rectangle that measures 50 feet by 30 feet. He wants to split his yard in half diagonally with a short garden fence. How many feet of fence will he need to purchase from the gardening centre?

4. You are at the park with your child flying a kite. The kite gets stuck at the top of a tree. If the length of string from the ground to the kite is 100 ft, and the angle that the string makes with the ground is 70°, how tall is the tree?

5. You are putting up a ladder against the side of your house. The ladder is 21 ft long, and you want to place the top of the ladder at a point just below the eave of your house. When the top of the ladder is as high as it can go, the base of the ladder is 10 ft away from the house (see diagram). The ladder company says that for safety, the angle the ladder makes with the ground should be 50° or more (or else the ladder may snap). Is your ladder setup safe? Justify your answer with mathematics.

21 ft

θ

10 ft