## Project 3 example

(For part 2 of project 3, submit the following for all problems written by your group members.)

## First draft.

If two poles are 24 ft apart. One is 15 ft tall and the other is 8. A cable is connecting the top points of the poles. What is the length of the cable.

## Final problem.

Two vertical poles are 24 ft apart. One pole is 15 ft tall and the other one is 8 ft tall. A cable is connecting the top points of the poles. What is the length of the cable?



Consider  $\triangle ABC$  as shown in the picture where AC is parallel to the ground. Assuming AC is horizontal and AB is vertical,  $\angle A = 90^{\circ}$ . Then AC = 24 and AB = 15 - 8 = 7. Then we have  $BC^2 = 24^2 + 7^2 = 576 + 49 = 625$ , so  $BC = \sqrt{625} = 25$ . Thus the cable is 25 ft long.