

Right Angle Trigonometry Applications

1) A flagpole stands in the middle of a flat, level field. Fifty feet away from its base a surveyor measures the angle to the top of the flagpole as 48° . How tall is the flagpole?

2) A 100-foot wharf sits along the bank of a river. A surveyor stands directly across the river from one end of the wharf. From where he stands the angle between the lines of sight to the two ends of the wharf is 31° . How wide is the river?

3) Standing across the street 50 feet from a building, the angle to the top of the building is 40° . An antenna sits on the front edge of the roof of the building. The angle to the top of the antenna is 52° . How tall is the building. How tall is the antenna itself, not including the height of the building?

4) Standing on one bank of a river, an explorer measures the angle to the top of a tree on the opposite bank to be 27° . He backs up 50 feet and re-measures the angle to the top of the tree at 22° . How wide is the river?