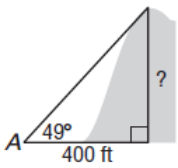
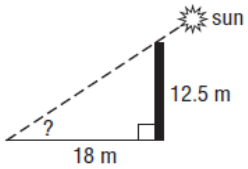
Advanced Algebra with Trigonometry Name_____#___
Section 13-1: Angles of Elevation & Depression Date_____Class_____

Solve each problem given below. Round measures of lengths to the nearest whole number and angles to the nearest whole degree. Answers are provided. Show your process to earn credit.

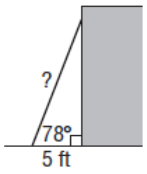
1.) The angle of elevation from point *A* to the top of a hill is $49^o$. If point *A* is 400 feet from the base of the hill, how high is the hill?



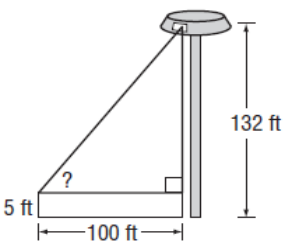

2.) Find the angle of elevation of the sun when a 12.5-meter-tall telephone pole casts a 18-meter-long shadow.



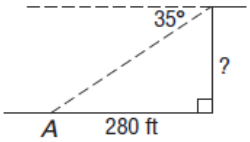

3.) A ladder leaning against a building makes an agle of $78^o$ with the ground. The foot of the ladder is 5 feet from the building. How long is the ladder?



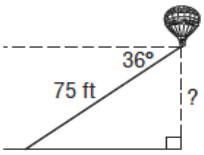

4.) A person whose eyes are 5 feet above the ground is stanind on the runway of an airport 100 feet from the control tower. That person observes an air traffic controller at the window of the 132-foot tower. What is the angle of elevation?



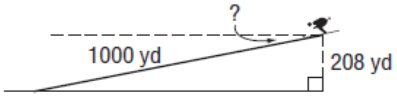
5.) The angle of depression from the top of a sheer cliff to point *A*on the ground is $35^{o}$. If point *A* is 280 feet from the base of the cliff, how tall is the cliff?



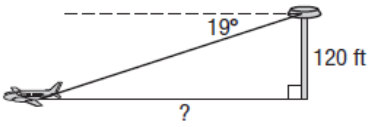

6.) The angle of depression from a balloon on a 75-foot string to a person on the ground is $36^{o}$. How high is the balloon?




7.) A ski run is 1000 yards long with a vertical drop of 208 yards. Find the angle of depression from the top of the ski run to the bottom.




8.) From the top of a 120-foot-high tower, an air traffic controller observes an airplane on the runway at an angle of depression of $19^{o}$. How far from the base of the tower is the airplane?




**ANSWERS:** 1.) 460 feet 2.) $35^{o}$ 3.) 24 feet 4.) $52^{o}$ 5.) 196 feet 6.) 44 feet 7.) $12^{o}$ 8.) 349 feet