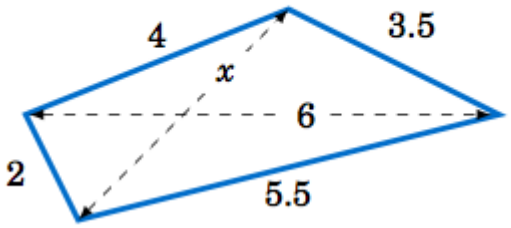
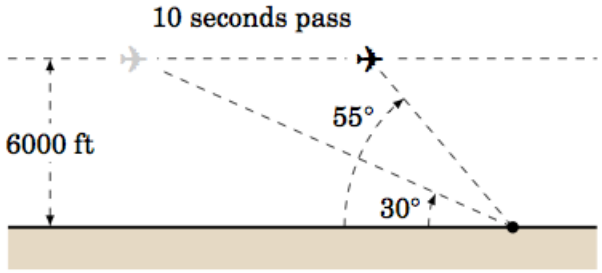
Solve the triangle ΔABC if $A = 30°$, $b = 4, c = 6$.

Find the length x of the diagonal of the quadrilateral



. An observer on the ground measures an angle of inclination of 30° to an approaching airplane, and 10 seconds later measures an angle of inclination of 55°. If the airplane is flying at a constant speed and at a steady altitude of 6000 ft in a straight line directly over the observer, find the speed of the airplane in miles per hour. (Note: 1 mile = 5280 ft)



Two banks of a river are parallel, and the distance between two points A and B along one bank is 500 ft. For a point C on the opposite bank, $\angle BAC = 56°$ and $\angle ABC = 41°$, as in the picture on the right. What is the width w of the river?
(*Hint: Divide $\overline{AB}$ into two pieces.*)