

Section 9.1

Applications Involving Right Triangles

SOLVING A RIGHT TRIANGLE

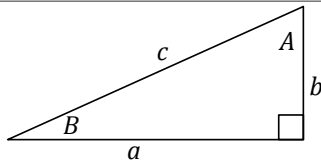
To solve a right triangle means to find the missing lengths of its sides and the measurements of its angles.

FACTS USED IN SOLVING RIGHT TRIANGLES

For the right triangle shown on the below, we have

$$c^2 = a^2 + b^2 \quad \text{and}$$

$$A + B = 90^\circ$$



APPLICATIONS

1. Television screens are measured by the length of the diagonal of the screen. Find the length of the base of a 19-inch television screen if the diagonal makes an angle of 38° with the base of the screen.
2. The angle of elevation from a point 116 meters from the base of the Eiffel Tower to the top of the tower is 68.9° . Find the approximate height of the tower.
3. At 3:00 pm, a boat is 12.5 miles due west of a radar station and traveling at 11 mph in a direction that is 57.3° south of an east-west line. At what time will the boat be closest to the radar station?