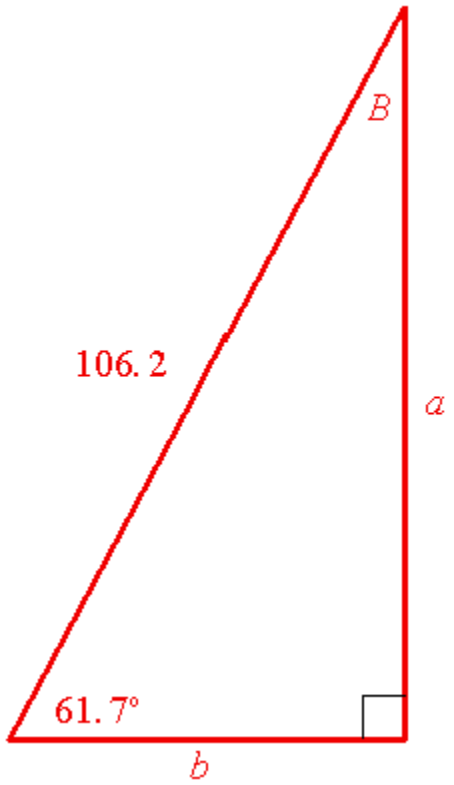
Some Problems Involving Right Triangles

MATH 1112 (College Trigonometry)

Example 1

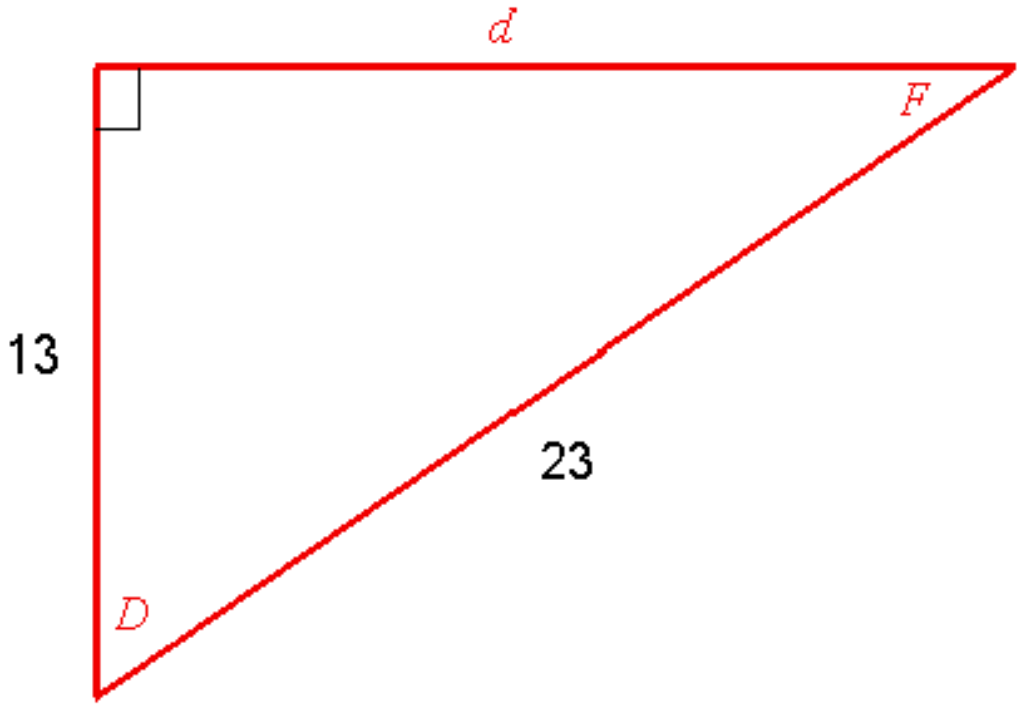
Solve this right triangle.

(That is, find a, b, and B.)



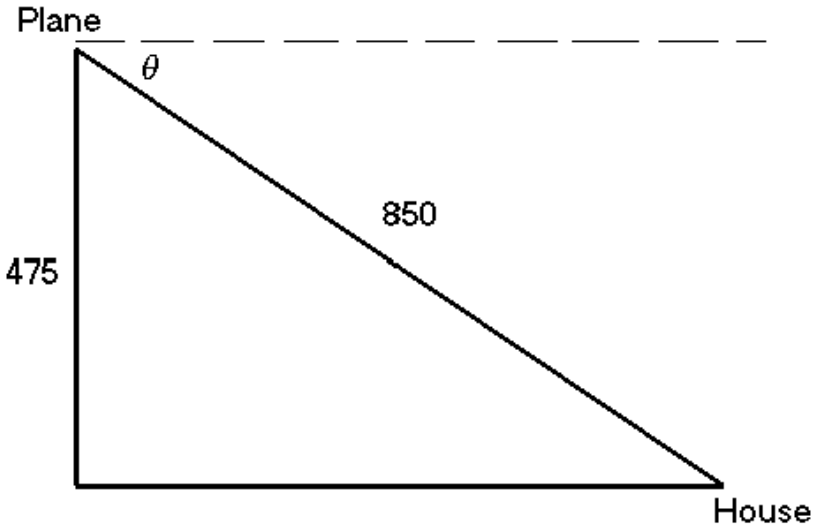
Example 2

Solve this right triangle.



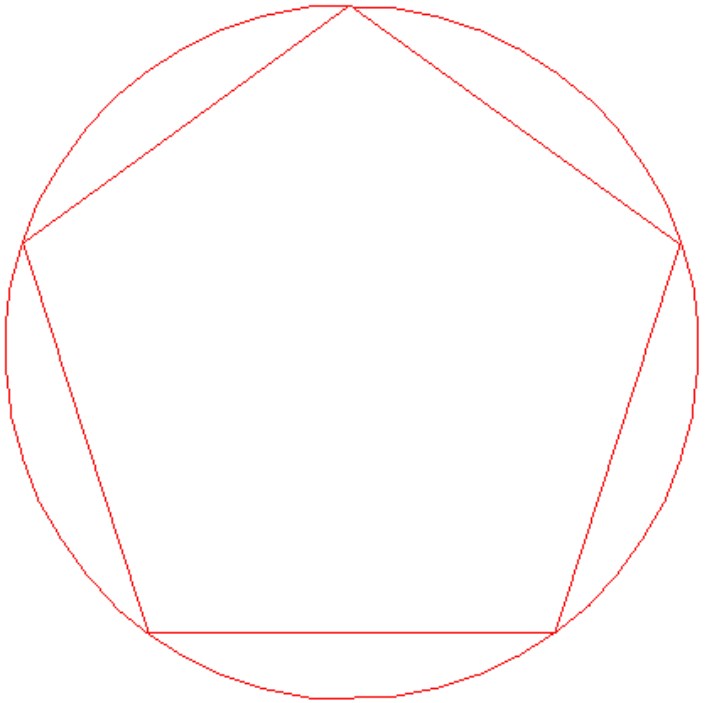
Example 3

- An aerial photographer who photographs farm properties for a real estate company has determined from experience that the best photo is taken from height of approximately 475 feet and a distance of 850 feet from the farmhouse. What is the angle of depression from the plane to the house in this instance?

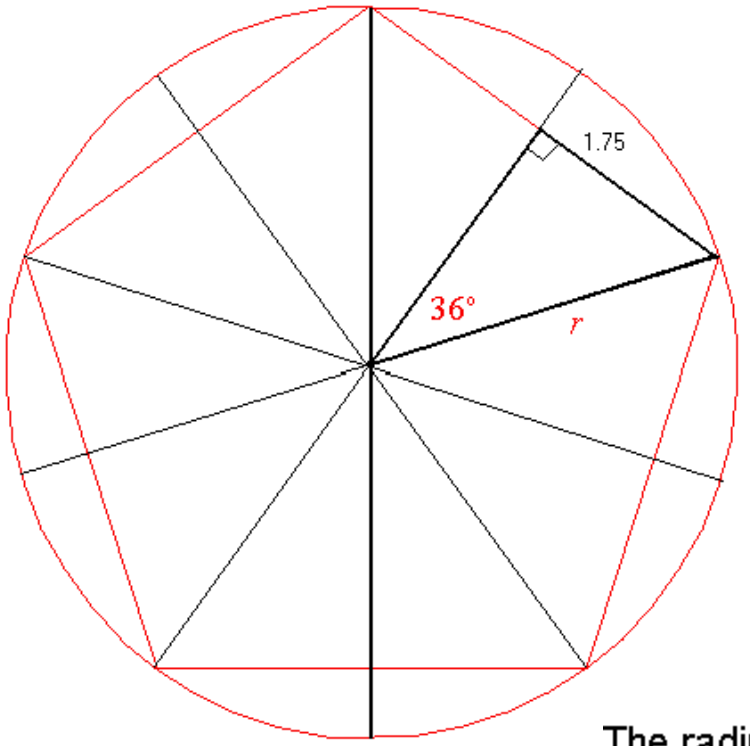


Example 4

A new tee shirt design is to have a regular pentagon inscribed in a circle, as shown in the figure. Each side of the pentagon is to be 3.5 inches long. Find the radius of the circumscribed circle.



Solution to Example 4



$$\sin(36°) = \frac{1.75}{r}$$

$$r = \frac{1.75}{\sin(36°)}$$

$$r \approx 2.9773$$

The radius of the circumscribed circle is about 3 inches.