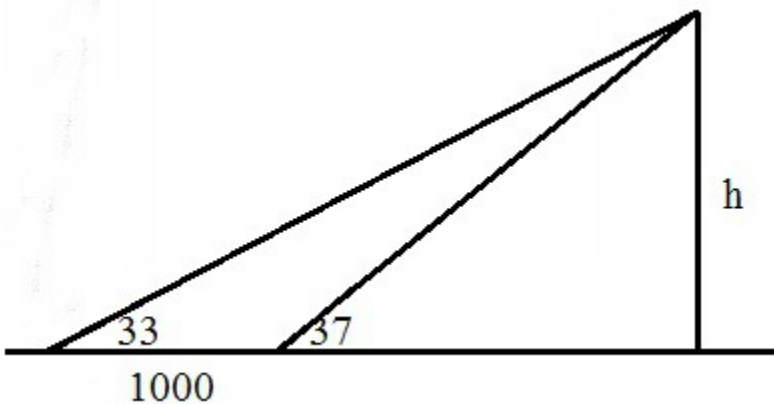


1. Write the function  $\sin t$  in terms of  $\tan t$ , if the point determined by  $t$  is in the 2nd quadrant.

2. A 20 ft. ladder leans against a building so the angle between the ground and the ladder is 70 degrees. How high is the ladder on the building? To be safe, the fire department recommends a ratio of 4 to 1 of the vertical height to the distance of the foot of the ladder to the wall. Is this a safe ladder?

3. To estimate the height of a mountain, an angle of elevation is measured at 33 degrees from a starting point. Then you move 1000 ft. closer to the mountain (on a level plain) and measure an angle of 37 degrees. How high is the mountain?



4. What are the angles (in degrees) in a 3, 4, 5 triangle?  
What about a 5, 12, 13 triangle?

5. Solve the equations listed below. Find all of the solutions in the region  $0 \leq x \leq 2\pi$ . Write the solutions in terms of inverse trig functions.

a)  $\cos x = 1/3$ .

b)  $\sin x = 2/3$ .

c)  $\cos x = -1/3$ .

d)  $\sin x = -2/3$