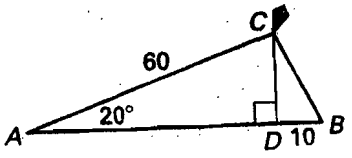
1. In a right triangle, θ is an acute angle and $\tan\theta = \frac{2nv}{n^2 - v^2}$. Find $\sin\theta$ in terms of n and v.

2. In the diagram at the right, a kite at point C is being held by a string from point A that is 60 ft long. The angle of elevation of the kite from point A is 20°. An observer at point B is 10 ft from the point on the ground D directly below the kite. What is the angle of elevation of the kite from point B?



3. An observer on the ground measures the angle of elevation to the top of a flagpole be 22°. The observer walks 20 ft closer to the flagpole and measures the angle of elevation to the top of the pole to be 33°.
   a. Let x = the distance from the closer position to the base of the flagpole and y = the height of the flagpole. Using the given information, write a system of two equations involving x and y.
   b. Solve the system you wrote in part (a) to find the height of the flagpole, to the nearest tenth of a foot.