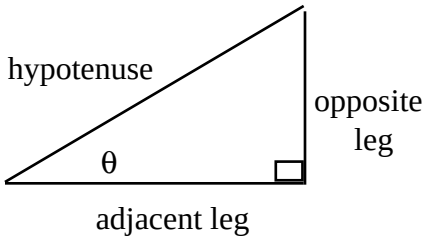
TRIG andVECTOR QUIZ 6.0

1. Find the acute angles of a $5-12-13$ right triangle.



2. An object moves with a speed of $20\,m/s$ with a direction angle of 37°. Find the velocity vector, $\vec{v} = (?,?)\ m/s$.

$$\sin\theta = \frac{opposite}{hypotenuse}$$

$$\cos\theta = \frac{adjacent}{hypotenuse}$$

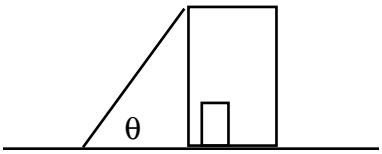
$$\tan\theta = \frac{opposite}{adjacent} = \frac{\sin\theta}{\cos\theta}$$

3. A rope pulls with a tension of T = 16N at a 30° angle in the xy - plane. Find the tension vector, $\vec{T} = (?,?)\text{N}$.

4. Given a force of $\vec{F} = (-3,3)\text{N}$.

Find : (a) the magnitude of the force
and (b) the direction angle, θ, of the force.

5. An 8m ladder just reaches the roof of a building. If $\theta = 53°$, find the height of the building.



6. If a flagpole casts a 6m shadow on the ground when $\theta = 40°$, find the height, h, of the flagpole.