Question#20977

a boat was docked 30.0 meters from the base of a cliff. a sailor used a clinometer to sight the top of the cliff. The angle between the horizontal and the line of sight was 74 degrees. The sailor held the clinometer 1.5 meters above the surface of the water. Determine the height of the cliff to the nearest tenth of a meter.

Solution:

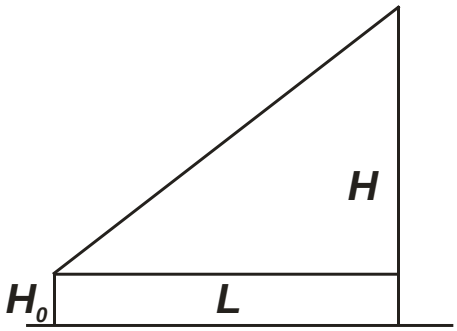
Let:

$L = 30\ m$

$H_0 = 1.5\ m$

$\alpha = 74°$

$H - ?$



From triangle:

$H = H_0 + Ltg\alpha$

$H = 1.5 + 30 * tg74° = 106.12\ m$

Answer: 106.12 m