1. A ladder, leaning against a wall, makes an angle of $60°$ with the horizontal. If the foot of the ladder is $2.5m$ away from th e wall, find the length of the ladder.

2. As observed from the top of a light house, $100m$ high above sea level, the angles of depression of a ship sailing directly towards it, change s from $30°$ to $60°$. Find the distance travelled by the ship during the period of observation. (Use $\sqrt{3} = 1.73$).