

Answer on Question #44434, Physics, Mechanics | Kinematics | Dynamics

Question:

a projectile is fired at an angle of 55 degrees above the horizontal with an initial speed of 35m/s. what id the magnitude of the horizontal component of the projectile's displacement at the end of 2s?

Answer:

The horizontal component of the projectile's velocity equals:

$$v_x = v \cos 55^\circ$$

where v is speed of projectile.

Therefore, magnitude of the horizontal component of the projectile's displacement will be equals:

$$s_x = v_x t = 35 \cdot \cos 55^\circ \cdot 2 \left[\frac{m}{s} s \right] \cong 40 m$$

Answer: 40 m