A projectile trajectory has a maximum height $h$, a range $R$. The mass is $m$ and the initial speed $v_0$. The angle between the initial velocity vector and the horizontal direction is $\theta$.

Determine the torque $\tau$ at P with respect to O.

A) $\tau = \frac{m g R}{2}$.

B) $\tau = m g h$.

C) $\tau = h m v_{0x} = h m v_0 \cos \theta$. 
By inspection, at P the force is \( mg \) and the level arm, that is the perpendicular distance from O to the force line, which is the vertical line through P, is \( \frac{R}{2} \).

Answer A.

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