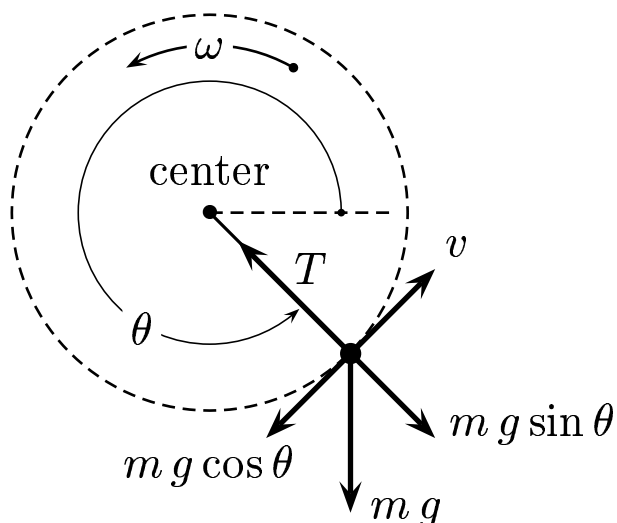


For the counter-clockwise circular motion below, the equation of motion is given by $\vec{T} + m \vec{g} = m \vec{a}_{cp}$. Let T , $m g_{\parallel r} = |m g \sin \theta|$, $m g_{\perp r} = |m g \cos \theta|$, and a_{cp} be positive definite quantities.



The tangential equation is

- A) $T - m g_{\perp r} = m a_{tangential}$. B) $T + m g_{\perp r} = m a_{tangential}$.
 C) $m g_{\perp r} - T = m a_{tangential}$. D) $m g_{\perp r} = -m a_{tangential}$.
 E) $m g_{\perp r} = m a_{tangential}$.

Explanation: By inspection for the tangential equation.

This implies that the magnitude of the total acceleration as observed in the inertial frame is $a = \sqrt{a_{cp}^2 + g^2}$.

Answer **E**.