Consider a conical pendulum with mass $m$ and the $\theta$, with the centripetal acceleration $a_c$.

Choose the correct horizontal equation from the free-body diagram for the mass.

A) $T \sin \theta = m a_c$.
B) $T \cos \theta = m a_c$.
C) $T \sin \theta = m g$.
D) $T \cos \theta = m g$.

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**Explanation**: Use the free-body diagram below.

From the sketch, for the $x$-equation, we have $T \sin \theta = m \frac{v^2}{r} = m a_c$.

Answer A.

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