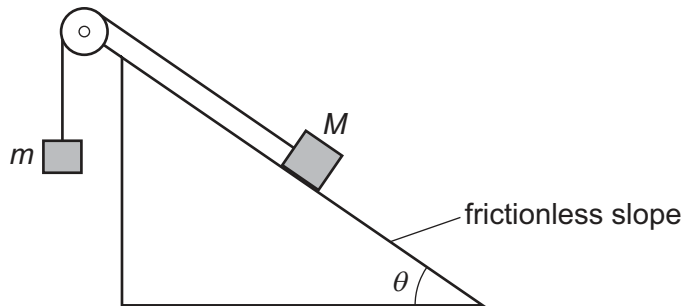


- 7 Two masses, M and m , are connected by an inextensible string which passes over a frictionless pulley. Mass M rests on a frictionless slope, as shown.



The slope is at an angle θ to the horizontal.

The two masses are initially held stationary and then released. Mass M moves down the slope.

Which expression **must** be correct?

- A** $\sin \theta < \frac{m}{M}$ **B** $\cos \theta < \frac{m}{M}$ **C** $\sin \theta > \frac{m}{M}$ **D** $\cos \theta > \frac{m}{M}$

- 8 A sky diver falls from a stationary balloon at time $t = 0$. As the sky diver falls, her speed and the