Pendulum ACT

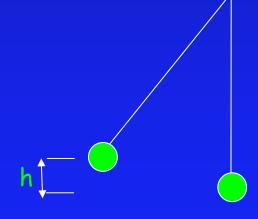
- As the pendulum falls, the work done by the string is
- 1) Positive 2) Zero 3) Negative

W = F d cos θ . But θ = 90 degrees so Work is zero.

How fast is the ball moving at the bottom of the path?

Conservation of Energy ($W_{nc}=0$)

$$\begin{split} \Sigma W_{nc} &= \Delta K + \Delta \ U \\ 0 &= K_{final} - K_{initial} + U_{final} - U_{initial} \\ K_{initial} + U_{initial} &= K_{final} + U_{final} \\ 0 + mgh &= \frac{1}{2} \ m \ v_{final}^2 + 0 \\ v_{final} &= sqrt(2 \ g \ h) \end{split}$$



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