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)

$\Sigma W_{nc} = \Delta K + \Delta U$

$0 = K_{final} - K_{initial} + U_{final} - U_{initial}$

$K_{initial} + U_{initial} = K_{final} + U_{final}$

$0 + mgh = \frac{1}{2} m v^2_{final} + 0$

$v_{final} = \sqrt{2 g h}$