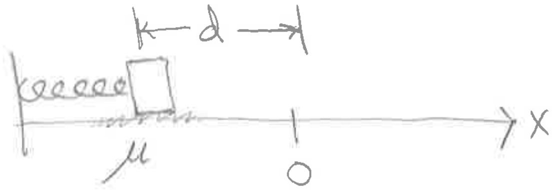
Quiz

Consider a block of mass m that is connected to a spring with spring constant K. The block rests on a floor with coefficient of friction μ. If the block is pushed a distance d from the natural rest length of the spring and released from rest, what will be the block's speed at $x = 0$?

Recall $\vec{F}_s = -K\vec{x}$.



(a) $\sqrt{\frac{1}{m}\left(\frac{1}{2}Kd^2 + \mu mgd\right)}$

(b) $\sqrt{\frac{1}{m}\left(\frac{1}{2}Kd^2 - \mu mgd\right)}$

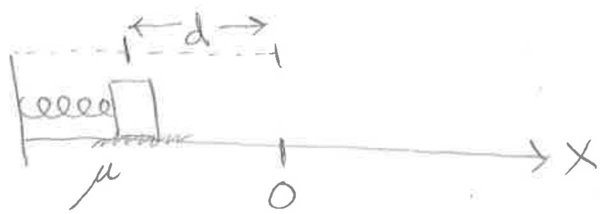
(c) $\sqrt{\frac{1}{m}\left(Kd^2 + 2\mu mgd\right)}$

(d) $\sqrt{\frac{1}{m}\left(Kd^2 - 2\mu mgd\right)}$

(e) None of above

Quiz

Consider a block of mass m that is connected to a spring with spring constant K. The block rests on a floor with coefficient of friction μ. If the block is pushed a distance d from the natural rest length of the spring and released from rest, at what position x_f will it come to rest? Recall $\vec{F}_s = -K\vec{x}$.



(a) $\frac{1}{2}Kd^2 - \frac{1}{2}Kx_f^2 - \mu m g x_f - \mu m g d = 0$

(b) $\frac{1}{2}Kd^2 - \frac{1}{2}Kx_f^2 - \mu m g x_f + \mu m g d = 0$

(c) $\frac{1}{2}Kd^2 + \frac{1}{2}Kx_f^2 - \mu m g x_f - \mu m g d = 0$

(d) $\frac{1}{2}Kd^2 + \frac{1}{2}Kx_f^2 - \mu m g x_f + \mu m g d = 0$

(e) None of above