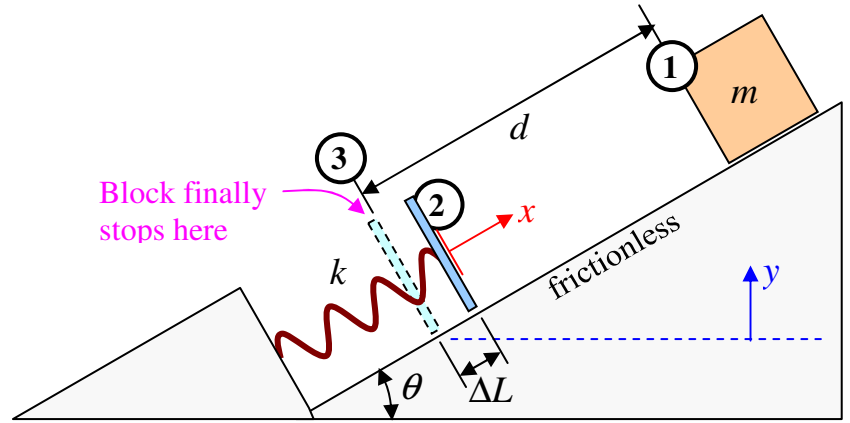


### Spring Energy Example

Given:  $k = 14,000 \text{ N/m}$   
 $\theta = 30^\circ$   
 $m = 12 \text{ kg}$   
 $\Delta L_{\text{max}} = 6 \text{ cm} = 0.06 \text{ m}$

Find  $d$ ,  $V_2$ ,  $E_{\text{spring-max}}$



### Spring Free Body Diagram Example

A motor rotates a pole that has a spring on its tip.  
The other end of the spring holds a ball.

Given  $m = 50 \text{ kg}$  (!),  $k = 3000 \text{ N/m}$ ,  
 $L_0 = 2 \text{ m}$ , and  $\theta = 70^\circ$ : Find  $\omega$ .

