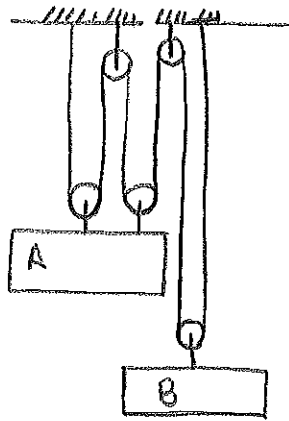
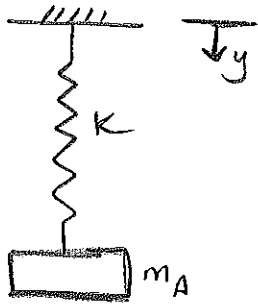


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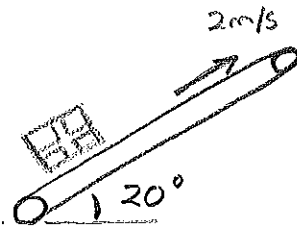


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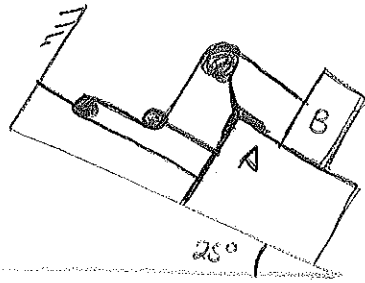
II Block A is released from rest when the spring is undeformed. Find its acceleration.



III. A box is dropped very slowly on a conveyor belt moving at 2 m/s . If the coefficient of kinetic friction is 0.4 , how long will the box slide before it reaches the velocity of the belt?



IV



$$m_A = 40 \text{ kg}$$

$$m_B = 8 \text{ kg}$$

$$\mu_s = 0.20 \text{ on all surfaces}$$

$$\mu_k = 0.15 \text{ on all surfaces}$$

Find $\vec{a}_B$ and the tension in the rope. Assume the pulleys have zero mass.

II The coefficient of static and kinetic friction between the truck bed and the crate are 0.4 and 0.3, respectively. If the truck is moving at 45 mph find the shortest distance it can stop if the load is not to slide.

