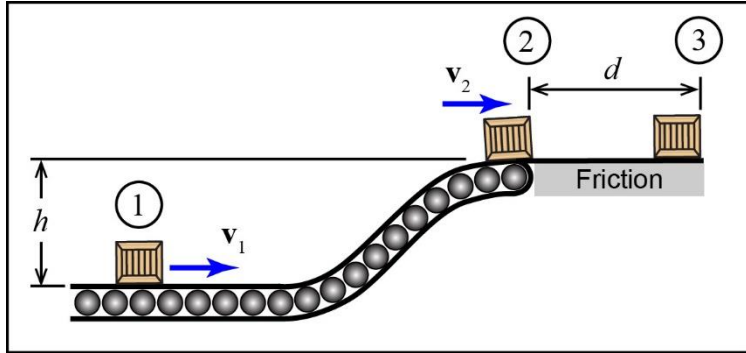


P7.3-9) Crates ($m = 50 \text{ kg}$) are delivered to the upper floor of a warehouse through a conveyer belt. The height of the conveyer belt is $h = 5 \text{ m}$. If crates arrive on the upper floor with a speed of $v_2 = 0.5 \text{ m/s}$, determine the distance the crates slides before coming to rest. The coefficient of kinetic friction between the crate and floor is 0.3. Also, determine the amount of non-conservative work done on the crate by the conveyer belt between states 1 and 2 if $v_1 = v_2$.



Given:

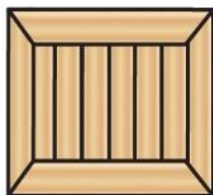
Find:

Solution:

Is this a conservative or non-conservative system?

Conservative Non-conservative

Free-body diagram.



Friction

Calculate the kinetic friction force.

$F_{fk} =$ _____

Work-energy balance

Determine the distance that the crate slides.

$d =$ _____

Determine the work done by the conveyer belt on the crate.

$U =$ _____