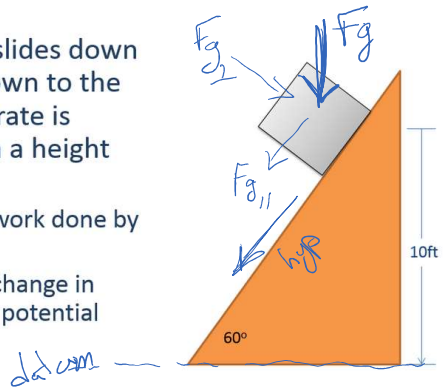
- A 16 lb crate slides down a ramp as shown to the right. If the crate is released from a height of 10 ft
  - What is the work done by gravity?
  - What is the change in gravitational potential energy



Work = Force * distance

Force $= F_g(\sin 60^\circ)$

distance $= \frac{10\text{ ft}}{\sin 60^\circ}$

$$\text{Work} = (16\sin 60^\circ)\left(\frac{10}{\sin 60^\circ}\right) = 160 \text{ ft}\cdot\text{lbs}$$

$\Delta PE = mgh$

$m = \frac{F_g}{32.2}$

$h = 10$ ft

$\Delta PE = \left(\frac{F_g}{32.2}\right)(32.2)(10)$

$\Delta PE = (16)(10) = 160$ ft·lbs