m = 2.0 kg

l = 1.00 m (of string)

h = 3.00 m (of ceiling)
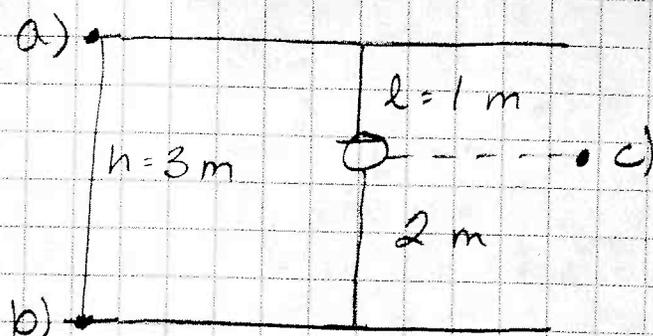
a) Δh between ball and ceiling:

$\Delta h = h_{Ball} - h_{ceiling}$

$= 2m - 3m$

$\Delta h = -1 \, m$ (ball is below ceiling)

$PE = m \cdot g \Delta h = (2 \, kg)(9.8 \, m/s^2)(-1 \, m)$

$$\boxed{PE = -19.6 \, J}$$

b) Δh between ball and floor

$\Delta h = h_{Ball} - h_{floor}$

$= 2m - 0m$

$\Delta h = 2 \, m$ (ball is above floor)

$PE = m \cdot g \cdot \Delta h = (2 \, kg)(9.8 \, m/s^2)(2 \, m)$

$$\boxed{PE = 39.2 \, J}$$

c) Δh between ball and a point at its same elevation:

$\Delta h = 0$

$PE = m \cdot g \cdot \Delta h = (2 \, kg)(9.8 \, m/s^2)(0 \, m)$

$$\boxed{PE = 0 \, J}$$