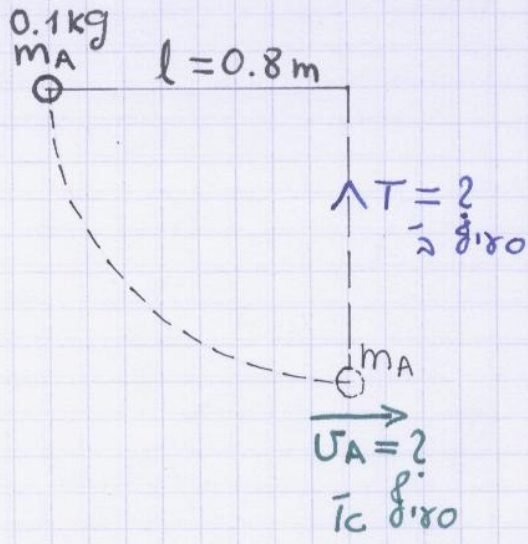


3

1c)  $\Delta E_k = \Delta E_p$

$\frac{1}{2} m_A v_A^2 = m_A g \cdot l$

$v_A = \sqrt{2gl} = 4 \text{ m/s}$



2)  $\Sigma F_R = \frac{mv^2}{R}$

$T - m_A g = \frac{m_A v_A^2}{l}$

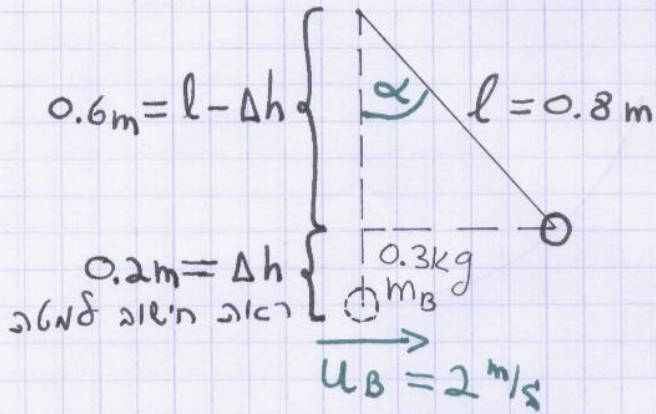
$T = m_A \left( g + \frac{v_A^2}{l} \right) = 3 \text{ N}$

2) גבהות נקודות א ו ב

$v_1 - v_2 = u_2 - u_1$

$v_A - v_B = u_B - u_A$

$u_A = u_B - 4$



$\Sigma P_f = \Sigma P_i$  ע"פ חוק שימור אנרגיה

$m_A u_A + m_B u_B = m_A v_A + m_B v_B$

$m_A (u_B - 4) + m_B u_B = m_A v_A$

$m_A u_B - 4m_A + m_B u_B = m_A v_A$

$u_B (m_A + m_B) = 8m_A$

$u_B = 2 \text{ m/s}$

$\Delta E_p = \Delta E_k$

$m_B g \cdot \Delta h = \frac{1}{2} m_B u_B^2 \Rightarrow \Delta h = \frac{u_B^2}{2g} = 0.2 \text{ m}$

$\cos \alpha = \frac{l - \Delta h}{l} = \frac{3}{4} \Rightarrow \alpha = 41.41^\circ$

2