

התוצאה היא  $x' = x - vt$

$$\boxed{x' = x - vt \quad y' = y \quad t' = t \quad : \text{הקשר בין הצירים}}$$

1.  $V = 30 \frac{m}{sec}$        $x = 800 m$        $x' = ?$   
 $t = 20 sec$

$$x' = x - vt = 800 - 30 \cdot 20 = 200 m$$

2.  $m_1 = 3 kg$        $m_2 = 1 kg$   
 $v_1 = 4 \frac{m}{sec}$        $v_2 = -3 \frac{m}{sec}$   
 $u_2 = 3 \frac{m}{sec}$

א.  $p = m_1 v_1 + m_2 v_2 = m_1 u_1 + m_2 u_2$       שימור תנע

$$\boxed{p = 9 \cdot N \cdot sec}$$

$$\boxed{u_1 = 2 \frac{m}{sec}}$$

2.  $V = 2 \frac{m}{sec}$

$$v_1' = v_1 - V = 2 \frac{m}{sec}$$

$$v_2' = v_2 - V = -5 \frac{m}{sec}$$

$$u_1' = u_1 - V = 0 \frac{m}{sec}$$

$$u_2' = u_2 - V = 1 \frac{m}{sec}$$

$$p' = m_1 v_1' + m_2 v_2' = 1 \cdot N \cdot sec$$

$$p' = m_1 u_1' + m_2 u_2' = 1 \cdot N \cdot sec$$

$$\boxed{\text{שימור תנע}}$$

3.  $V = 70 \frac{km}{hr} = 19.44 \frac{m}{sec}$

$$v_y = 1 \frac{m}{sec}$$

א.  $(0, v_y', 0)$

$$y(t) = v_0 t - \frac{1}{2} g t^2 = \left[ 1 - \frac{g t^2}{2} \right] \quad x = 0$$

2.  $(V, v_y', 0)$

שימור תנע

$$\boxed{\begin{aligned} x(t) &= Vt = 19.44 t \\ y(t) &= 1 - \frac{g t^2}{2} \end{aligned}}$$

3.  $v_x = -1 \frac{m}{sec}$

for  $(-1, 0, 0)$  : 3/1

$x(t) = -t$

$v = v' + V = -1 + 19.44 = 18.44$  : 1/1/1/1

$x(t) = 18.44t$

4.  $F = ma$        $F = -k\Delta x = m \frac{d^2x}{dt^2}$

∴ (1/1/1/1)    1/1/1/1    1/1/1/1

$x = x' + Vt \Rightarrow \Delta x = x_t - x_0 = x'_t + Vt - (x'_0 + Vt) = x'_t - x'_0 = \Delta x'$

$\dot{x} = \dot{x}' + V$

$\ddot{x} = \ddot{x}'$

∴

∴ (1/1/1/1)    1/1/1/1    1/1/1/1

$-k\Delta x' = m \frac{d^2x'}{dt^2}$

∴ (1/1/1/1)    1/1/1/1