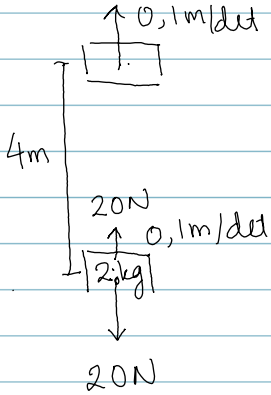


Energi potensial

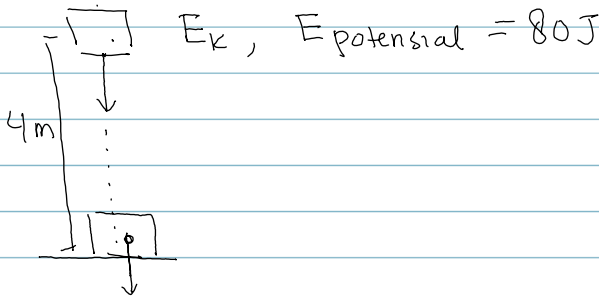


$$F = 20 \text{ N}$$

$$W_{\text{kita}} = 20 \times 4 = \underline{\underline{80 \text{ J}}}$$


$$E_{k_0} = \frac{1}{2} \cdot 2 \cdot 0,1^2$$

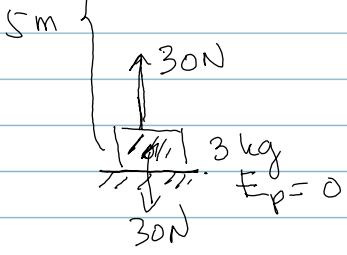
$$E_k = \underline{\underline{\frac{1}{2} \cdot 2 \cdot 0,1^2}}$$

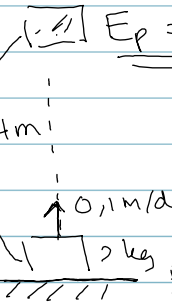


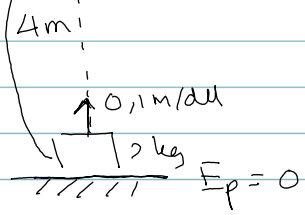
energi potensial : energi yang dimiliki oleh benda karena posisinya

energi potensial gravitasi \rightarrow Ketinggian

1)  $E_p = ?$

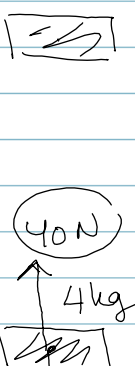


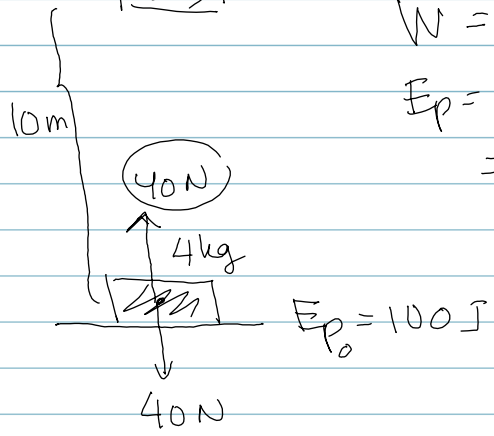
 $E_p = \underline{\underline{80 J}}$



$$W = \underline{\underline{150 J}}$$

$$E_p = 0 + 150 J = \underline{\underline{150 J}}$$

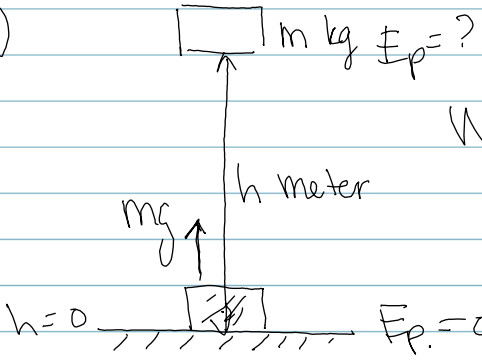
2)  E_p



$$W = 40 \times 10 = 400 J$$

$$E_p = 100 + 400 = \underline{\underline{500 J}}$$

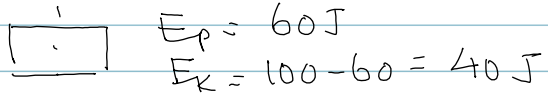
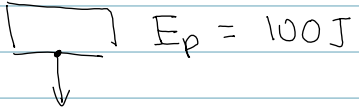
3)



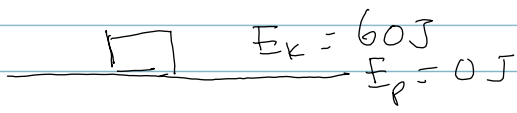
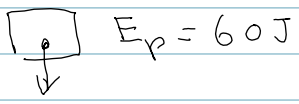
$$W = mgh$$

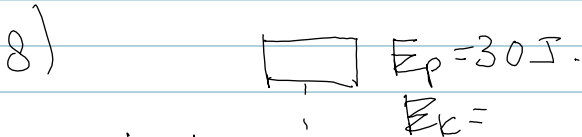
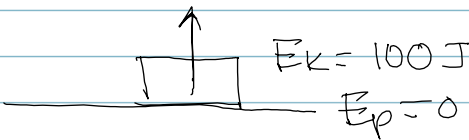
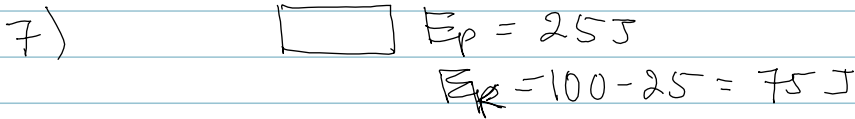
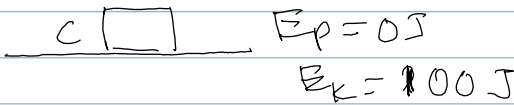
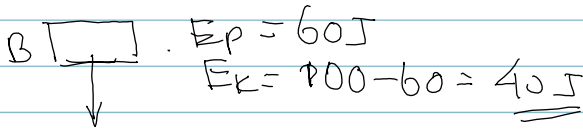
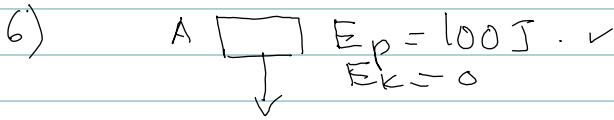
$$E_p = 0 + mgh$$
$$= \underline{\underline{mgh}}$$

4)

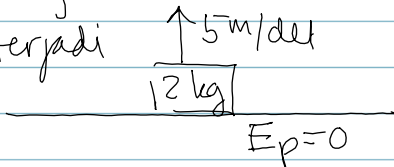


5)





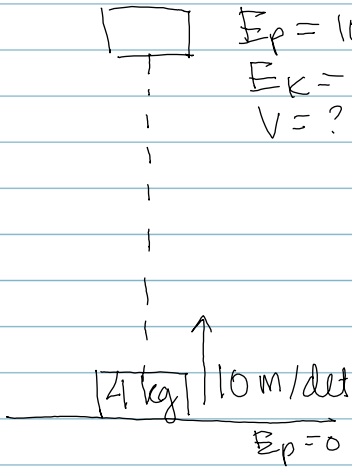
tidak
mungkin
terjadi



$$E_k = \frac{1}{2} m v^2 = \frac{1}{2} \cdot 2 \cdot 5^2 = 25 \text{ J}$$

5

9)



$$E_p = 100 \text{ J}$$
$$E_k = ?$$
$$v = ?$$

$$E_k = 200 - 100$$
$$= 100 \text{ J}$$

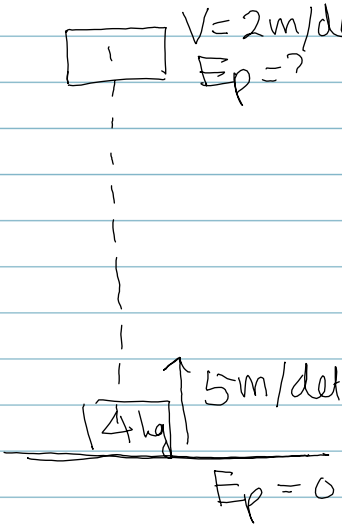
$$E_k = \frac{1}{2} m \cdot v^2$$

$$100 = \frac{1}{2} \cdot 4 \cdot v^2$$

$$v = \underline{\underline{\sqrt{50} \text{ m/det}}}$$

$$E_{k_{awal}} = \frac{1}{2} m v^2 = \frac{1}{2} \cdot 4 \cdot 10^2$$
$$= 200 \text{ J}$$

10)



$$v = 2 \text{ m/det}$$
$$E_p = ?$$

$$E_k = \frac{1}{2} m \cdot v^2$$

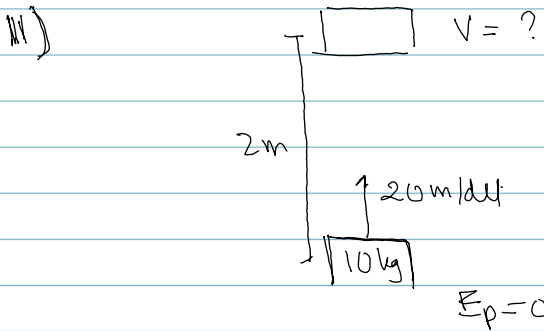
$$= \frac{1}{2} \cdot 4 \cdot 2^2 = 8 \text{ J}$$

$$E_p = 50 - 8 = \underline{\underline{42 \text{ J}}}$$

$$E_{k_0} = \frac{1}{2} m v^2$$

$$= \frac{1}{2} \cdot 4 \cdot 5^2$$

$$= 50 \text{ J}$$



Cara E_p

Cara grav

$$E_{\text{P awal}} = 0$$

$$E_{\text{P akhir}} = mgh = 10 \cdot 10 \cdot 2 \\ = 200 \text{ J}$$

$$E_{\text{K awal}} = \frac{1}{2} m v^2 \\ = \frac{1}{2} \cdot 10 \cdot 20^2 \\ = 2000 \text{ J}$$

$$E_{\text{K akhir}} = 2000 - 200 \\ = 1800 \text{ J}$$

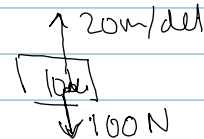
$$\frac{1}{2} m v^2 = 1800$$

$$\frac{1}{2} \cdot 10 v^2 = 1800$$

$$v^2 = 360$$

$$v = \sqrt{360}$$

$$= \underline{\underline{6\sqrt{10} \text{ m/det}}}$$



$$\frac{1}{2} \cdot 10 \cdot 20^2 = 100 \cdot 2 = \frac{1}{2} m v^2$$

$$2000 - 200 = \frac{1}{2} \cdot 10 \cdot v^2$$

$$v^2 = 360$$

$$v = \underline{\underline{6\sqrt{10} \text{ m/det}}}$$

12)

$v = ?$ $E_p = mgh = 10 \cdot 10 \cdot 2$
 $= 200 \text{ J}$

2m ?

↑ 2 m/det

tidak mungkin!



$$E_k = \frac{1}{2} m v^2 = \frac{1}{2} \cdot 10 \cdot 2^2$$

$$E_p = 0 \quad = \underline{\underline{20 \text{ J}}}$$

Cara grav :

$$20 \text{ J} - 100 \cdot h = 0$$

$$h = \frac{20}{100} = \underline{\underline{\frac{1}{5} \text{ m}}}$$

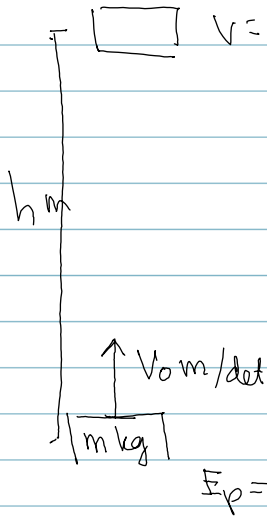
cara E_p :

$$E_p = m \cdot g \cdot h = 10 \cdot 10 \cdot h = 100 h$$

$$E_{k0} = 20$$

$$20 = 100 h \rightarrow h = \underline{\underline{\frac{1}{5} \text{ m}}}$$

13)



$$E_p = mgh$$

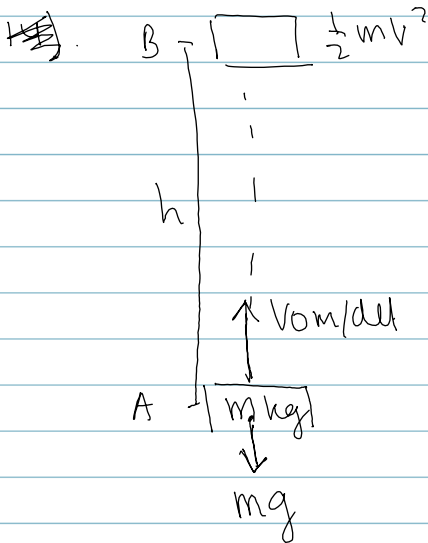
$$=$$

$$\frac{1}{2} m v_0^2 = mgh + \frac{1}{2} m v^2$$

$$v^2 = v_0^2 - gh \cdot 2$$

$$v = \sqrt{v_0^2 - 2gh} \quad !!$$

$$E_k = \frac{1}{2} m v_0^2$$



$$\frac{1}{2} m v_0^2 - mgh = \frac{1}{2} m v^2$$

$$v^2 = v_0^2 - 2gh$$

$$v = \sqrt{v_0^2 - 2gh}$$

$$h = \frac{v_0 t + vt}{2} \rightarrow t = \frac{2h}{v + v_0}$$

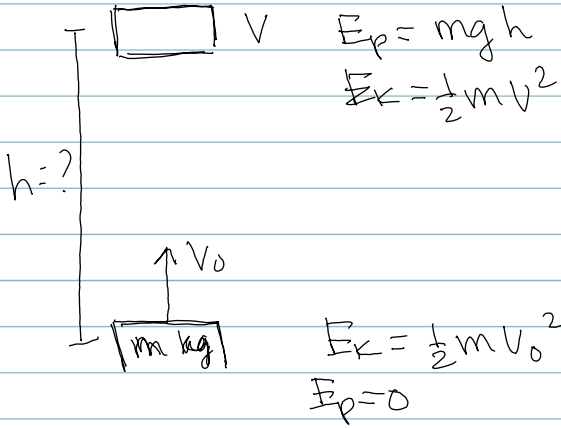
$$v = v_0 - gt$$

$$v_0 - v = g \cdot \left(\frac{2h}{v + v_0} \right)$$

$$(v_0 - v)(v_0 + v) = 2gh$$

$$v_0^2 - v^2 = 2gh \rightarrow v^2 = v_0^2 - 2gh \Rightarrow v = \sqrt{v_0^2 - 2gh}$$

14)



$$E_p = mgh$$

$$E_k = \frac{1}{2}mv^2$$

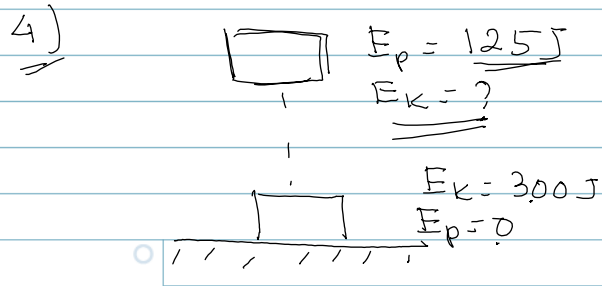
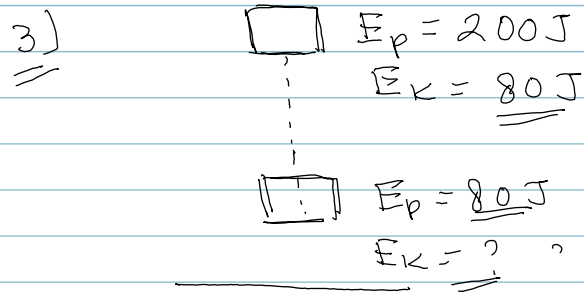
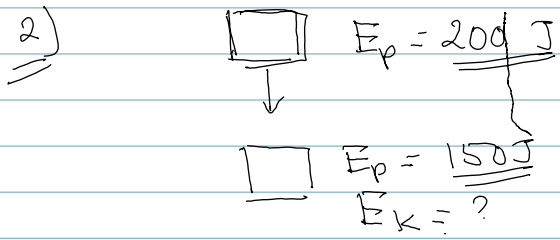
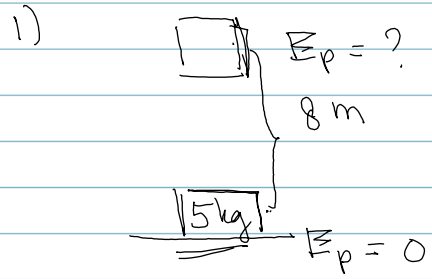
$$E_k = \frac{1}{2}mv_0^2$$


$$E_p = 0$$

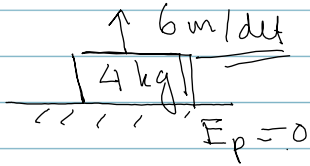
$$\frac{1}{2}mv_0^2 = mgh + \frac{1}{2}mv^2$$


$$h = \frac{\frac{1}{2}(v_0^2 - v^2)}{g}$$

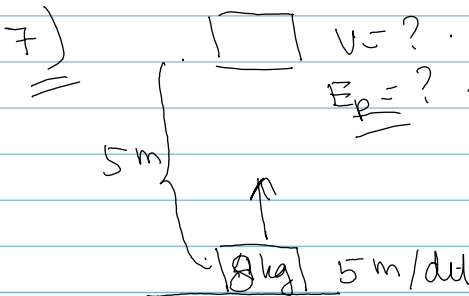
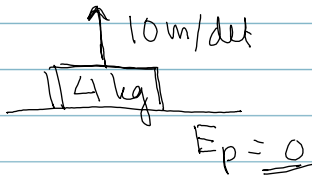
Latchan Energi potensial

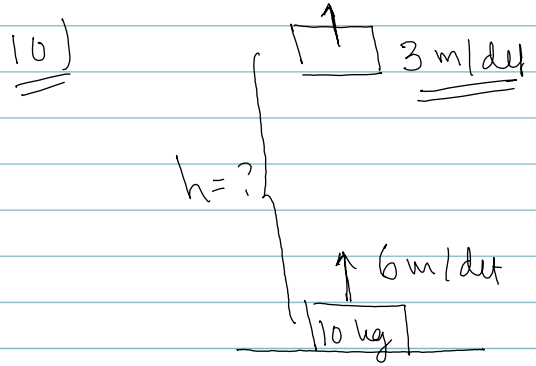
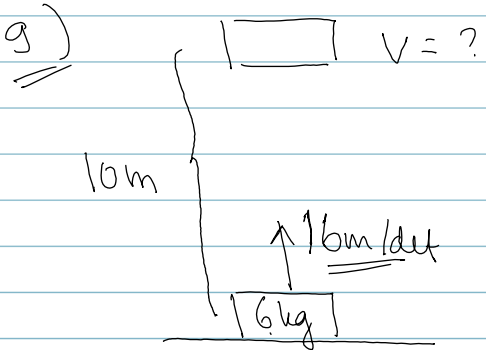
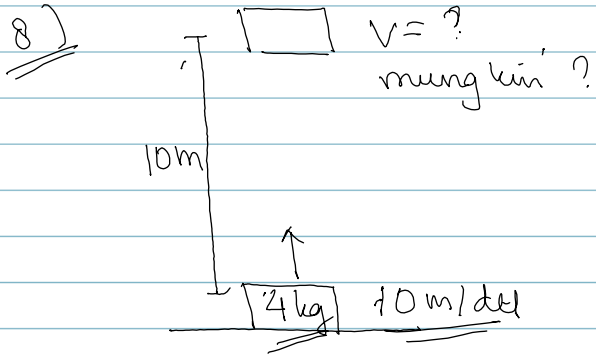


5)  $E_p = 100\text{ J}$
 $E_k = ?$



6)  $E_p = 125\text{ J}$
 $v = ?$





gunakan 3 cara

