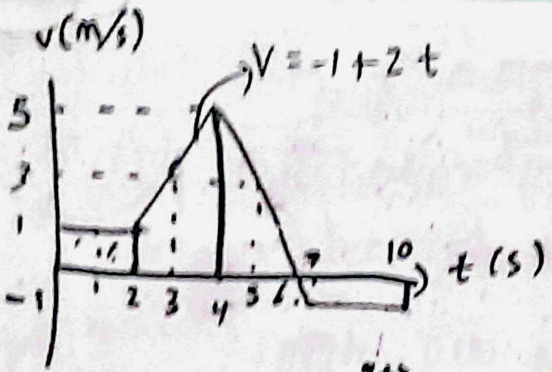
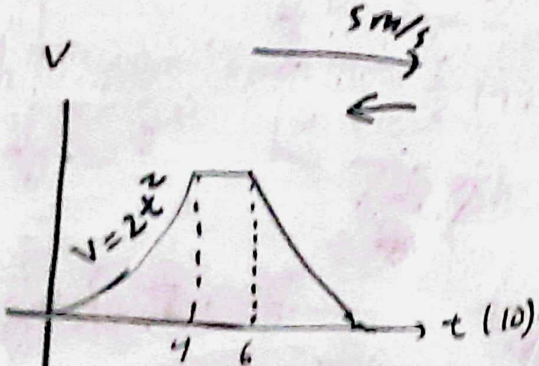
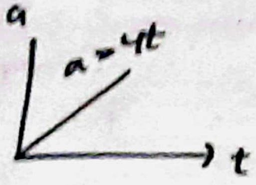


$\frac{4+3}{2} \times 1$



$\int x^n dx = \frac{1}{n+1} x^{n+1}$



$V(t) = 7 - \int 4t\,dt = 4\left(\frac{t^2}{2}\right)$

$= \int a\,dt$

$= \frac{1}{2}(4)t^2 = 2t^2 + c$

A. Vektor kecepatan partikel sbg fungsi waktu pada 0-2 s & 4-7 s

$V_{0-2} = 1\,\hat{i}$ m/s.

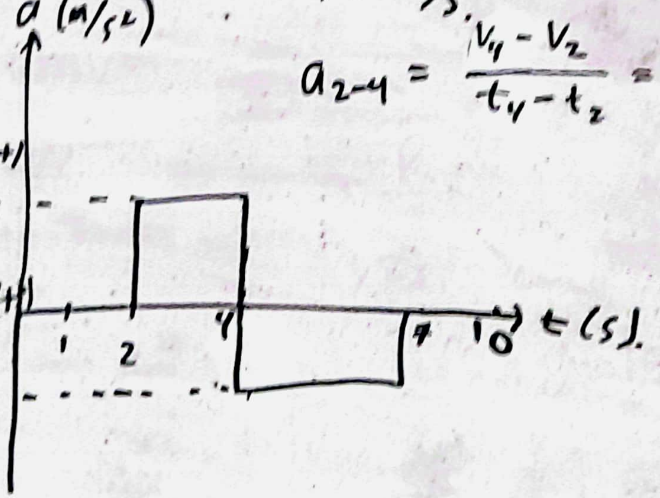
$V_{4-7} = V_0 + at\,\hat{i}$ m/s.

$= 5 + at\,\hat{i}$ m/s.

$a_{4-7} = \frac{V_7 - V_4}{t_7 - t_4} = \frac{-1-5}{3} = -2$ m/s².

$V_{4-7} = (5 - 2t)\,\hat{i}$ m/s.

B.



$a_{2-4} = \frac{V_4 - V_2}{t_4 - t_2} = \frac{5-1}{4-2} = 2$ m/s².

C. $x(t=0) = x(0) = 5$ m.

$x(t) = x(0) + vt$

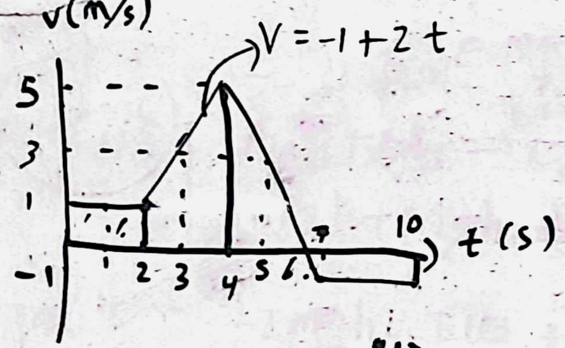
$x(10) = 5 + (2 + 6 + 5 - 3{,}5)$

$x(10) = 14{,}5$ m

D. $a_{rt} = \frac{V(t) - V(0)}{t - t_0} = \frac{V(10) - V(0)}{10}$

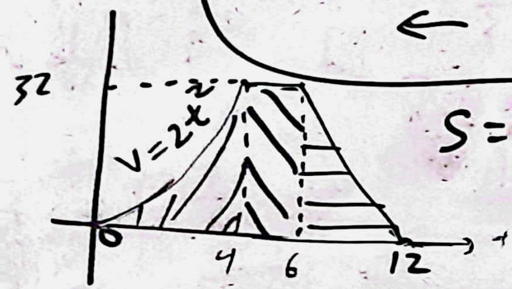
$a_{rt} = \frac{-1-1}{10}$

$= -\frac{1}{5}$ m/s²



$\frac{4+3}{2} \times 1$

5 m/s



$S = S(0) + \boxed{vt}$

$\int$ + luas grafik

s = ?

V (4) = 32 m/s.

$S = \int_0^4 2t^2 dt + 32(6-4) + \frac{1}{2}(6)(32)$

$= \frac{2}{3} t^3 \Big|_0^4 + 64 + 96 = \frac{128}{3} + 64 + 96$

A. Vektor kecepatan partikel sbg fungsi waktu pada 0-2 s & 4-7 s

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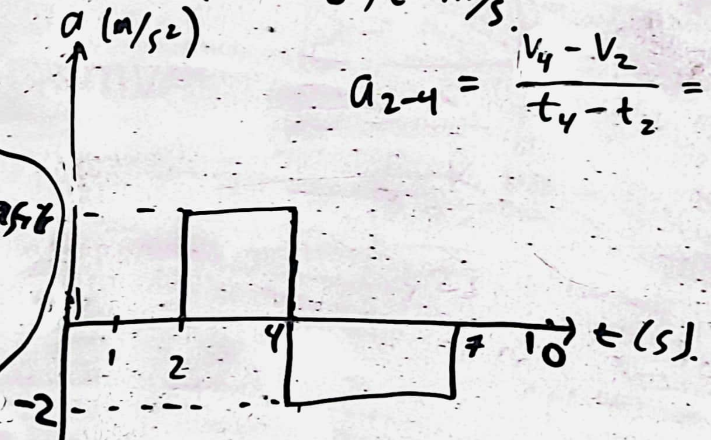

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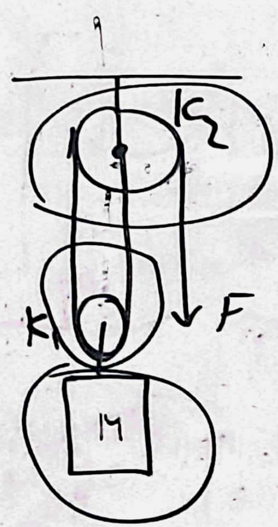
D. $a_{r+} = \frac{V(t) - V(0)}{t - t_0} = \frac{V(10) - V(0)}{10}$

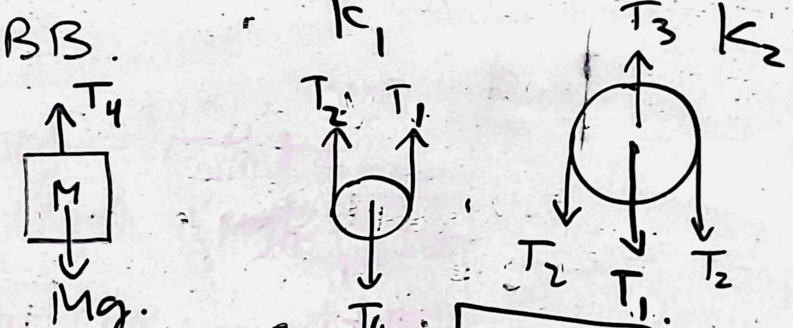
$a_{r+} = \frac{-1-1}{10}$

$= -\frac{1}{5}$ m/s²

2.



A. DBB.



$$\boxed{T_2 = T_1}$$

B. Balok.

$\Sigma F = 0.$

$$\boxed{T_4 - Mg = 0}$$

K_1

$$\boxed{2T_2 - T_4 = 0}$$

K_2

$$\boxed{T_3 - 3T_2 = 0}$$

$$\boxed{T_2 = F}$$

$$\Rightarrow 2F - T_4 = 0 \Rightarrow \boxed{T_4 = 2F}$$

$$2F = Mg.$$

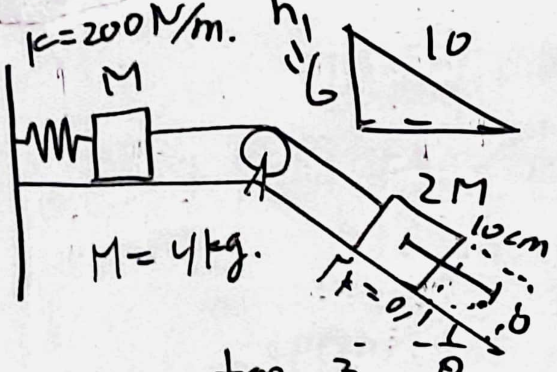
$$\boxed{F = \frac{Mg}{2}}$$

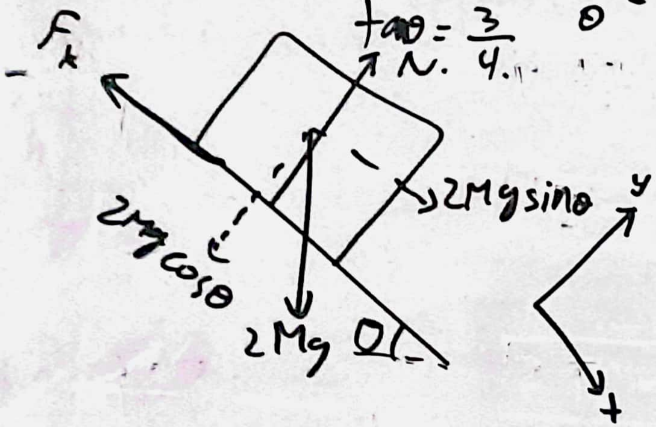
$$\boxed{T_4 = Mg}$$

$$T_3 = 3T_2 = 3\left(\frac{Mg}{2}\right) = \frac{3}{2}Mg$$

$$T_2 = \frac{Mg}{2} = T_1$$

3.





A. Total E kinetik.

$$\boxed{EM_1 = EM_2 + W_g} \quad 1$$

$\Sigma F_y = 0 \Rightarrow$

$N - 2mg\cos\theta = 0$

$N = 2mg\left(\frac{4}{5}\right)$

$$\boxed{N = \frac{8}{5} Mg} \quad 2.$$

$$\boxed{f_k = \mu_k N = \frac{8}{5}\mu_k Mg} \quad 3$$

$\Rightarrow EP_1 + Ek_1 = EP_2 + Ek_2 + W_g$

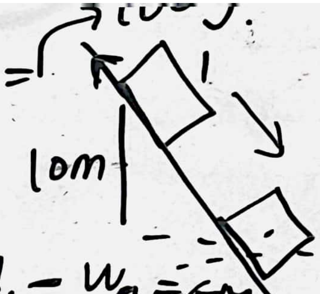
$2Mgh = 0 + \frac{1}{2}k\Delta x^2 + Ek_2 + f_k . \Delta x$

$2Mgh = \frac{1}{2}k\Delta x^2 + Ek_2 + \frac{8}{5}\mu_k Mg\Delta x$

$Ek_2 = 2Mgh - \frac{1}{2}k\Delta x^2 - \frac{8}{5}\mu_k Mg\Delta x$

$Ek_2 = \underline{\underline{3,16\text{ J}}}$

$EM_1 =$



EM_2 ?

$EM_1 - W_g = EM_2$

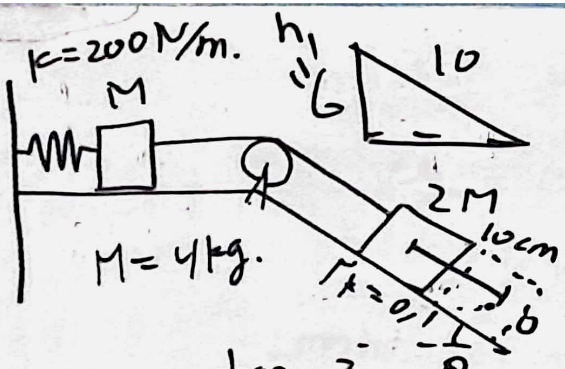
$EM_1 = EM_2 + W_g.$

$W_g = f_k . S$

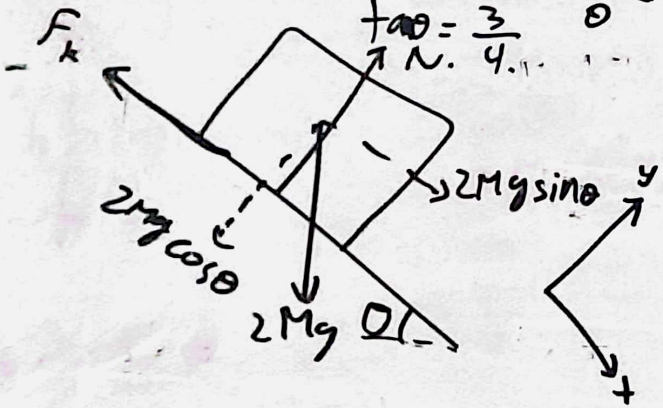
$= |f_k||S|\cos(180°)$

$W_g = -f_k S.$

3.



$M = 4\,kg.$



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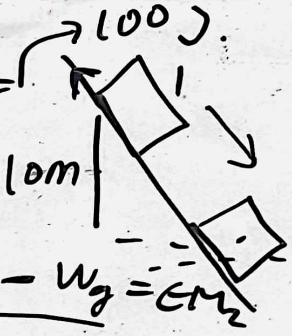
$Ek_2 = 3{,}16\,J$

$EM_1 = 100\,J.$



$EM_2\,?$

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$EM_1 = EM_2 + W_g.$

$W_g = f_k . S.$

$= |f_k||S|\cos(180°)$

$W_g = -f_k S.$

B. $\Rightarrow \underbrace{\frac{1}{2}MV^2}_{Ek_M} + \underbrace{\frac{1}{2}(2M)V^2}_{Ek_{2M}} = 3{,}16$

$Ek_{2M} = 2\,Ek_M$

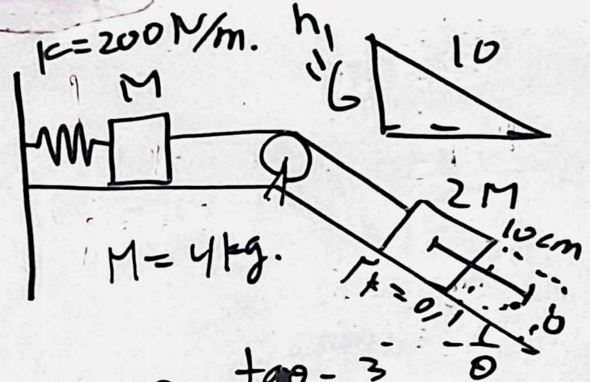
$Ek_M + Ek_{2M} = 3{,}16.$

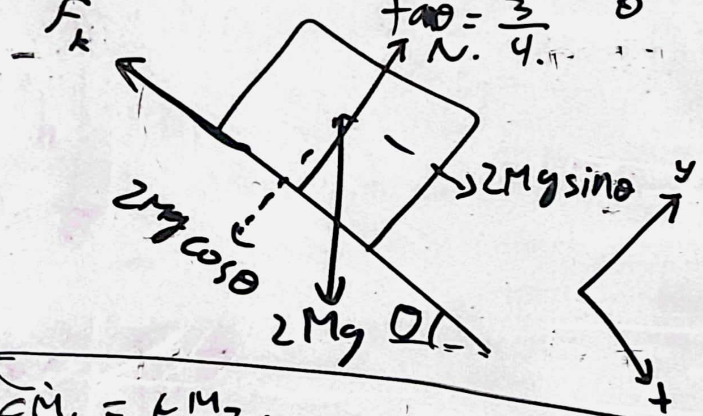
$Ek_M + 2\,Ek_M = 3{,}16.$

$Ek_M = \frac{3{,}16}{3}.$

$Ek_{2M} = 2\left(\frac{3{,}16}{3}\right)$

3.





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$$Ek_2 = 2Mgh - \frac{1}{2}k\Delta x^2 - \frac{8}{5}\mu_k Mg\Delta x$$

$$Ek_2 = 3{,}16\,J$$

$EM_1 = EM_2$.

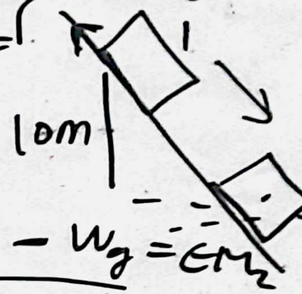
$$2Mgh_1' = EP_2 + \cancel{Ek_2} + W_g.$$

$$2mgh_1' = \frac{1}{2}k\Delta x'^2 + \frac{8}{5}\mu_k Mg\Delta x'$$

$$2Mg\frac{3}{5}\Delta x' = \frac{1}{2}k\Delta x'^2 + \frac{8}{5}\mu_k Mg\Delta x'$$

$$\Delta x' = 0{,}416\,M$$

$EM_1 = 100\,J.$



EM_2?

$$EM_1 - W_g = EM_2$$

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$W_g = f_k.\,S.$

$= |f_k||S|\cos($

$W_g = -f_k S.$

$$B. \Rightarrow \underbrace{\frac{1}{2}MV^2}_{Ek_M} + \underbrace{\frac{1}{2}(2M)V^2}_{Ek_{2M}} =$$

$$Ek_{2M} = 2\,Ek_M$$

$$Ek_M + Ek_{2M} = 3{,}16$$

$$Ek_M + 2\,Ek_M = 3{,}16$$

$$Ek_M = \frac{3{,}16}{3}.$$

$$Ek_{2M} = 2\left(\frac{3{,}16}{3}\right)$$