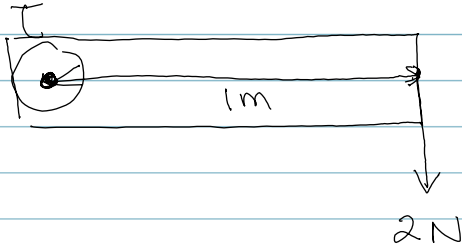


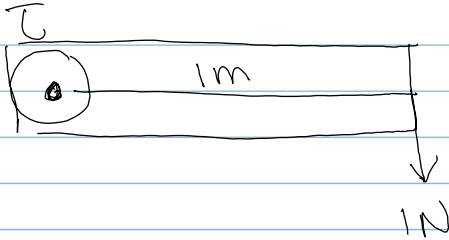


Benda Tegar

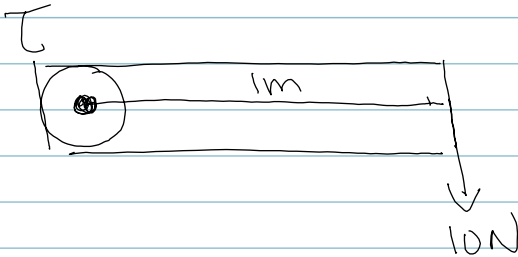
Benda Tegar : benda yang tidak berubah bentuk ketika diberi gaya



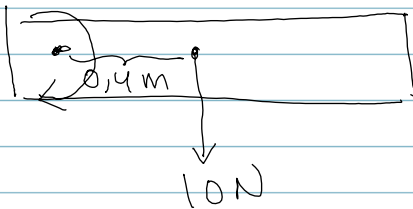
$$\tau = ?$$
$$\tau = 2 \text{ N} \cdot \text{m}$$



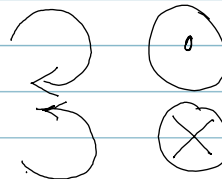
$$\tau = 1 \text{ N} \cdot \text{m}$$



$$\tau = 10 \text{ N} \cdot \text{m}$$

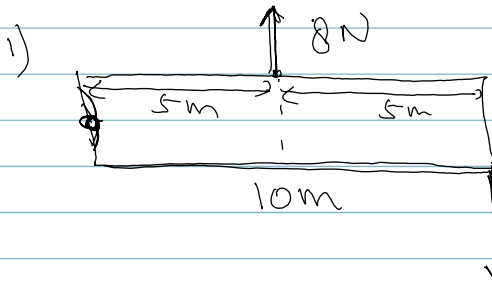


$$\tau = 4 \text{ N} \cdot \text{m}$$





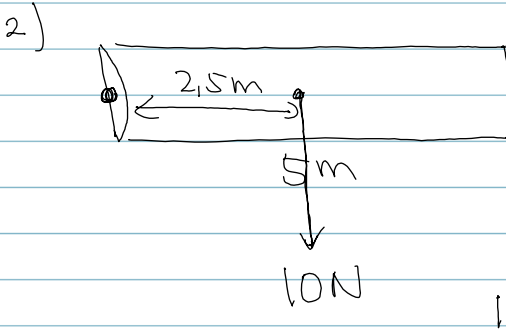
Menghitung momen gaya



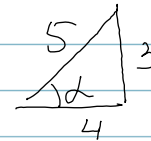
$$\tau_1 = 100 \cdot \text{N} \cdot \text{m} \quad \curvearrowright$$

$$\tau_2 = 40 \text{ N} \cdot \text{m} \quad \curvearrowleft$$

$$\tau = 60 \text{ N} \cdot \text{m} \quad \curvearrowright$$



$$\tan \alpha = \frac{3}{4}$$



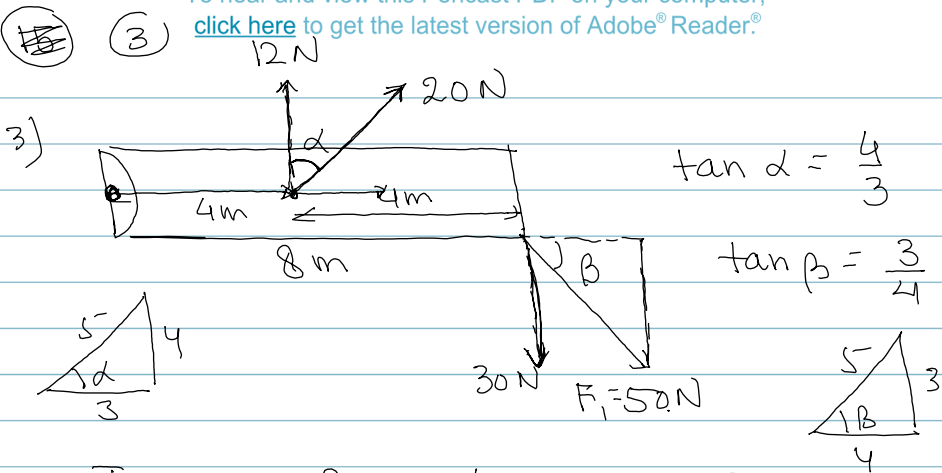
$$\tau_1 = 16 \cdot 5 = 80 \text{ N} \cdot \text{m} \quad \curvearrowright$$

$$\tau_2 = 10 \cdot 2,5 = 25 \text{ N} \cdot \text{m} \quad \curvearrowright$$

$$\tau = 105 \text{ N} \cdot \text{m} \quad \curvearrowright$$

~~15~~

3)

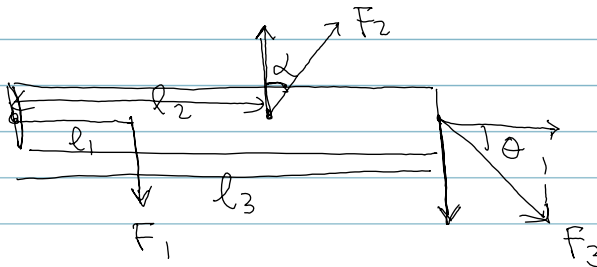


$$\tau_1 = 30 \cdot 8 = 240 \text{ N} \cdot \text{m} \quad \curvearrowright$$

$$\tau_2 = 12 \cdot 4 = 48 \text{ N} \cdot \text{m} \quad \curvearrowleft$$

$$\tau = 192 \text{ N} \cdot \text{m} \quad \curvearrowright$$

4)



$$\tau_1 = F_1 \cdot l_1 \quad \curvearrowleft$$

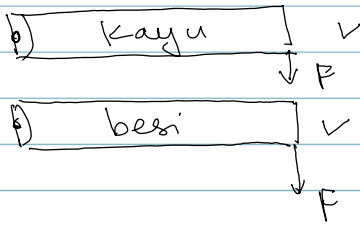
$$\tau_2 = F_2 \cos \alpha \cdot l_2 \quad \curvearrowright$$

$$\tau_3 = F_3 \sin \theta \cdot l_3 \quad \curvearrowright$$

$$\tau = F_1 l_1 + F_3 \sin \theta l_3 - F_2 \cos \alpha l_2 \quad \curvearrowright$$

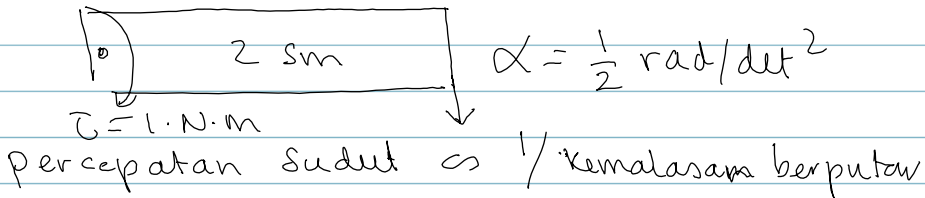
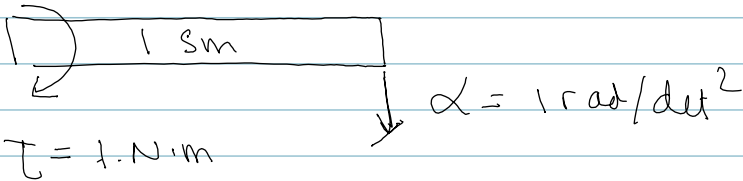


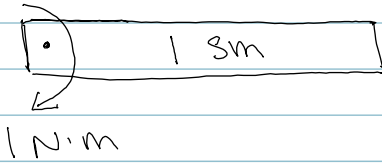
Momen Inersia / kemalasan berputar



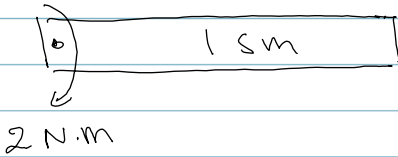
Satuan : Sm (satuan malas meter)

1 Sm : Momen inersia benda sedemikian sehingga ketika benda tsb diberi torsi $1 \text{ N}\cdot\text{m}$ ia akan berotasi dengan percepatan sudut 1 rad/det^2

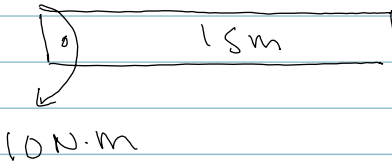




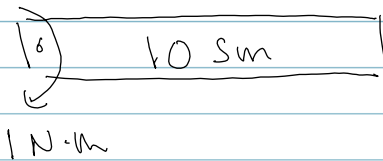
$$\alpha = 1 \text{ rad/det}^2$$



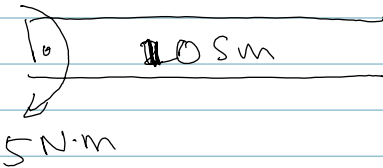
$$\alpha = 2 \text{ rad/det}^2$$



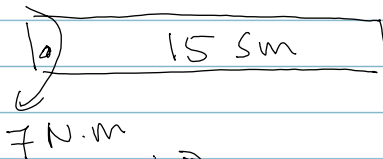
$$\alpha = 10 \text{ rad/det}^2$$



$$\alpha = \frac{1}{10} \text{ rad/det}^2$$



$$\alpha = \frac{5}{10} \text{ rad/det}^2$$



$$\alpha = \frac{7}{15} \text{ rad/det}^2$$

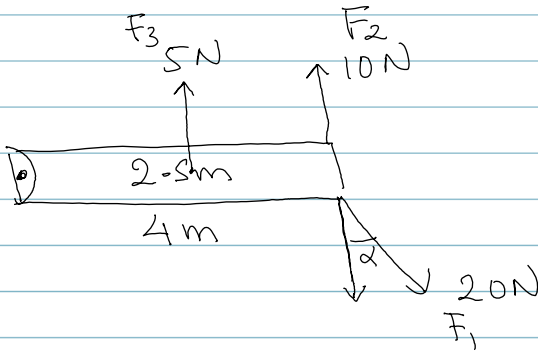


$$\alpha = \frac{T}{I} \text{ rad/det}^2 //$$

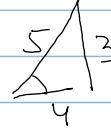
8

6

1)



$$\tan \alpha = \frac{3}{4}$$



$$\cos \alpha = \frac{4}{5}$$

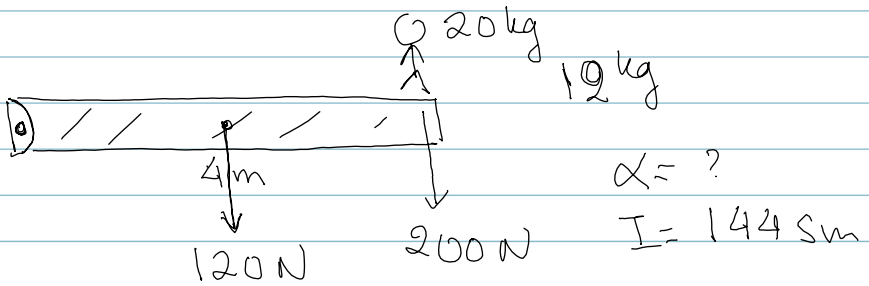
$$\tau_1 = 20 \cos \alpha \cdot 4 = 20 \cdot \frac{4}{5} \cdot 4 = 64 \text{ N}\cdot\text{m} \quad \curvearrowright$$

$$\tau_2 = 10 \cdot 4 = 40 \text{ N}\cdot\text{m} \quad \curvearrowleft$$

$$\tau_3 = 5 \cdot 2 = 10 \text{ N}\cdot\text{m} \quad \curvearrowleft$$

$$\tau = 14 \text{ N}\cdot\text{m} \quad \curvearrowleft$$

$$\alpha = \frac{14}{2} = \underline{\underline{7 \text{ rad/det}^2}}$$



$$\tau_o = 200 \cdot 4 = 800 \text{ N}\cdot\text{m} \quad \curvearrowright$$

$$\tau_B = 120 \cdot 2 = 240 \text{ N}\cdot\text{m} \quad \curvearrowright$$

$$\tau = 1040 \text{ N}\cdot\text{m} \quad \curvearrowright$$

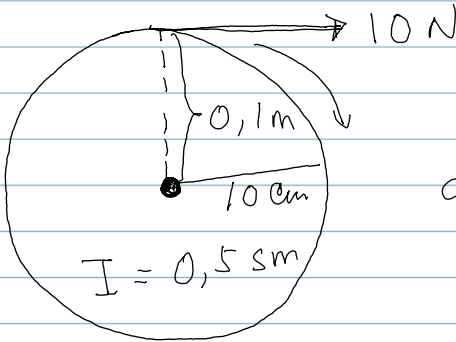
$$\alpha = \frac{1040}{144} \text{ rad/det}^2$$

$$= \underline{\underline{7 \frac{2}{9} \text{ rad/det}^2}}$$

~~287~~

8

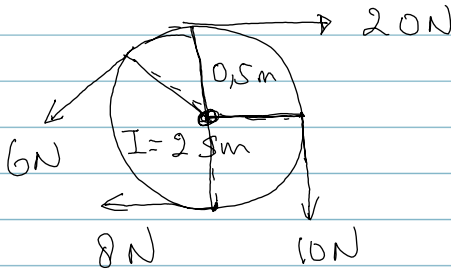
3



$$\tau = 0,1 \times 10 = 1 \text{ N} \cdot \text{m}$$

$$\alpha = \frac{\tau}{I} = \frac{1}{0,5} = 2 \text{ rad/det}^2$$

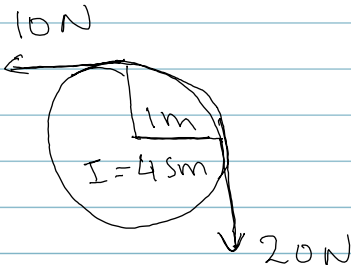
4



$$\begin{aligned} \tau &= 20 \times 0,5 + 10 \times 0,5 \\ &\quad + 8 \times 0,5 - 6 \times 0,5 \\ &= 32 \times 0,5 = 16 \text{ N} \cdot \text{m} \end{aligned}$$

$$\alpha = \frac{16}{2} = 8 \text{ rad/det}^2$$

5



$$\tau = 20 \cdot 1 - 10 \cdot 1 = 10 \text{ N} \cdot \text{m}$$

$$\alpha = \frac{\tau}{I} = \frac{10}{4} = 2,5 \text{ rad/det}^2$$

~~21~~

9

Lathhan

