YAKEEN NEET 2.0

2026

Laws of Motion

PHYSICS | Lecture 03

By - Saleem Ahmed Sir

Todays Goal

- Pulley system
- Equilibrium.

must try

KPP - 16

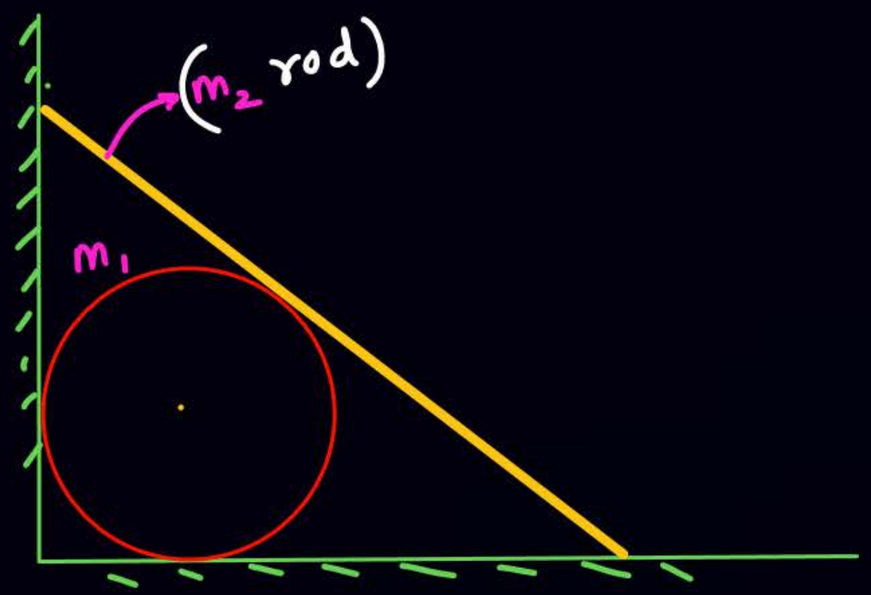
KPP - 20

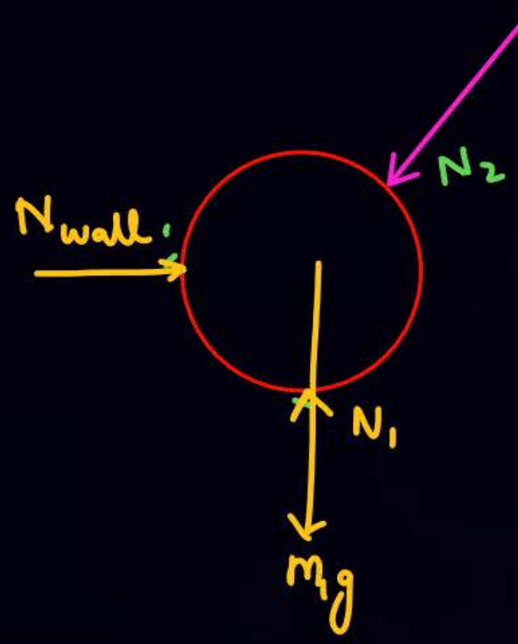
Vedio sol uploaded

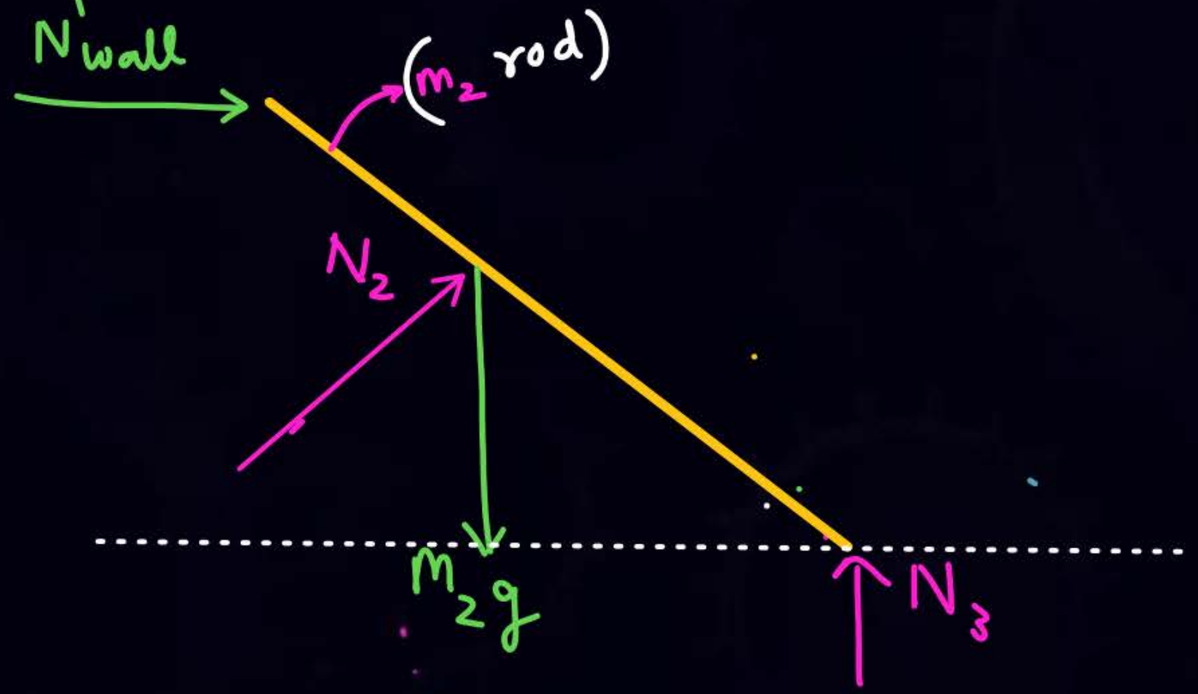
> 40%.

$x > 5$

Q

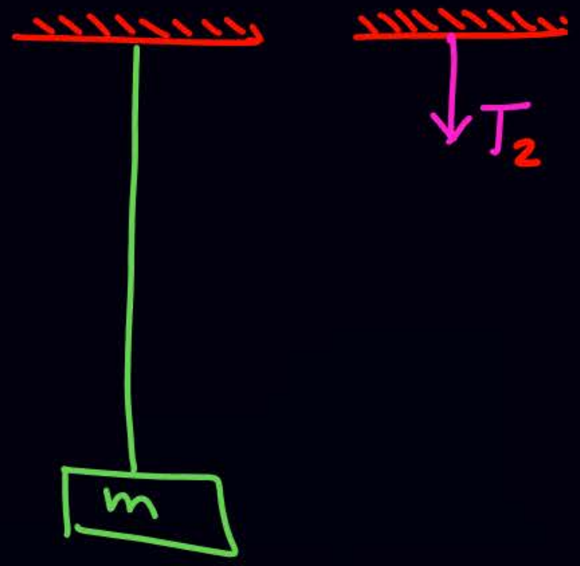






Tension force

- pulling force.
- It act away from the body towards the string.



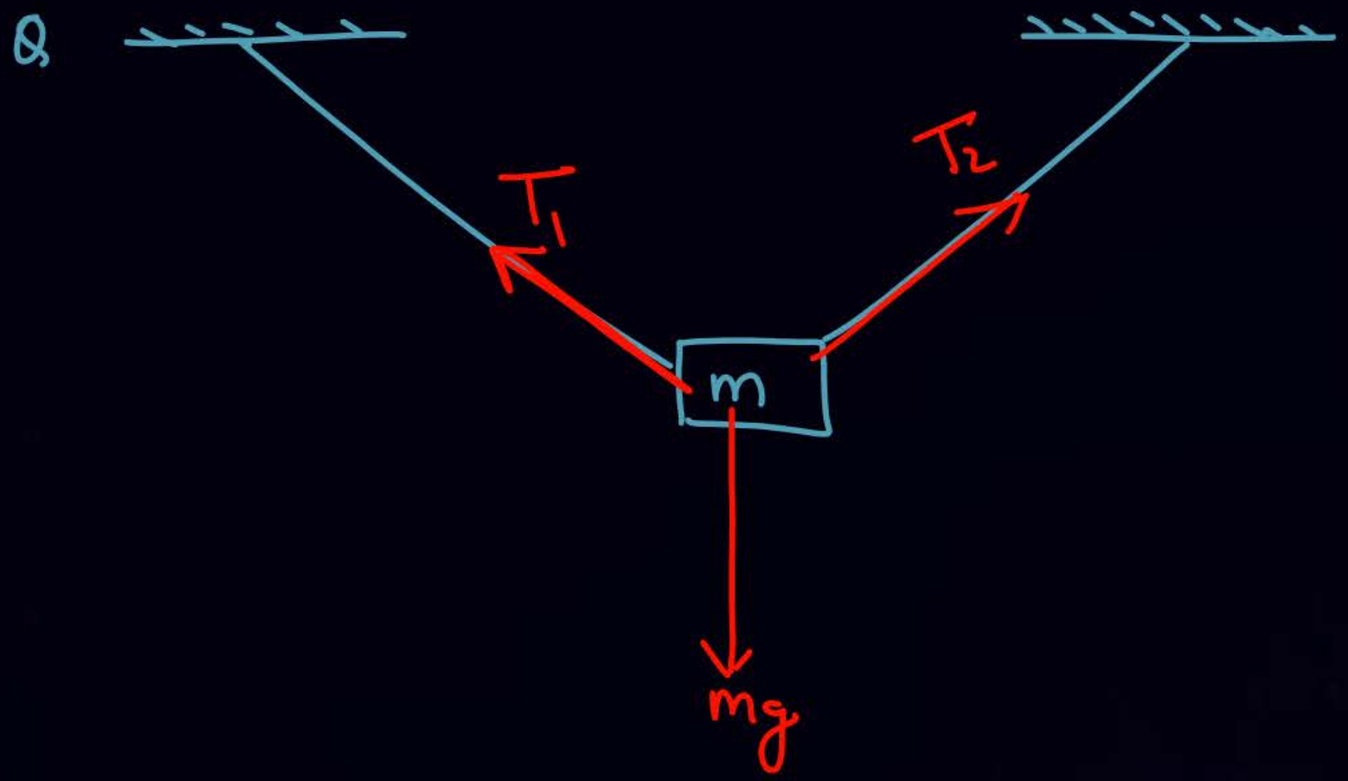
$T_2 = T_1 + m_s g$

If string is massless

$m_s \to 0$ $\quad T_2 = T_1$

$T_1 = mg$

Q.



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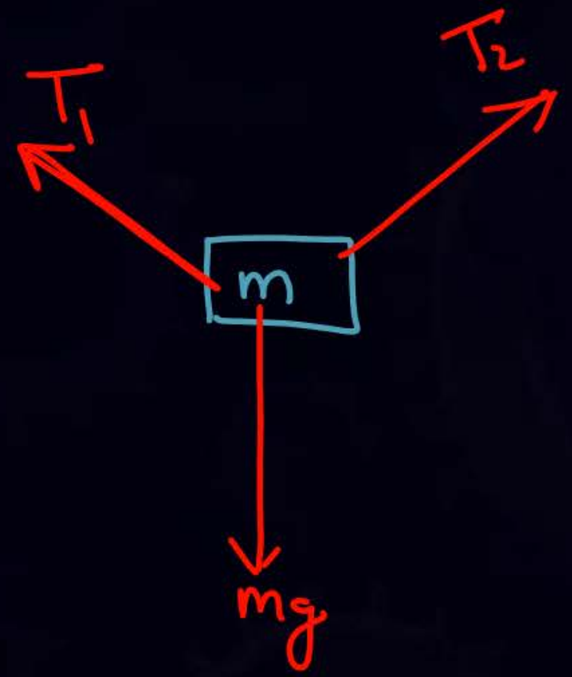

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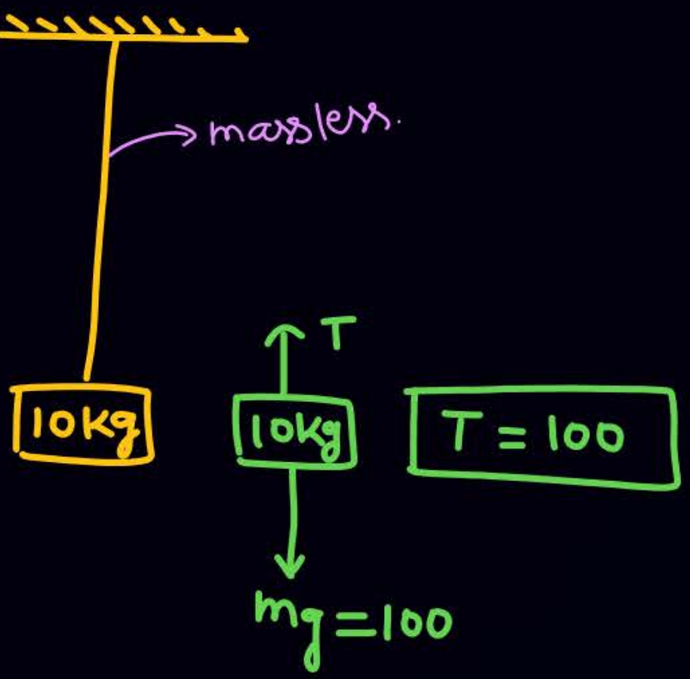

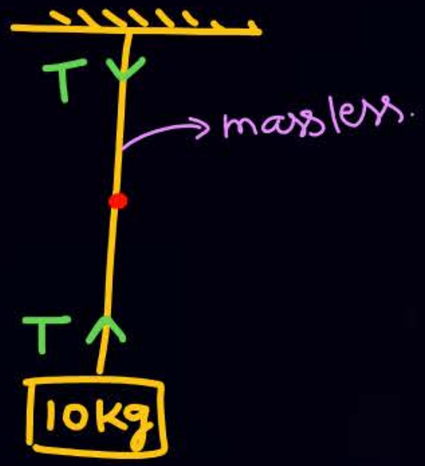

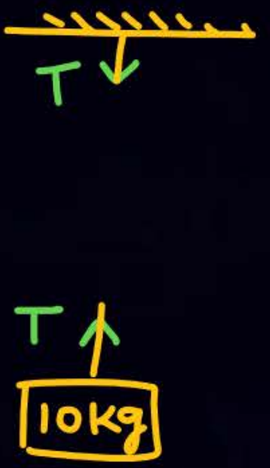

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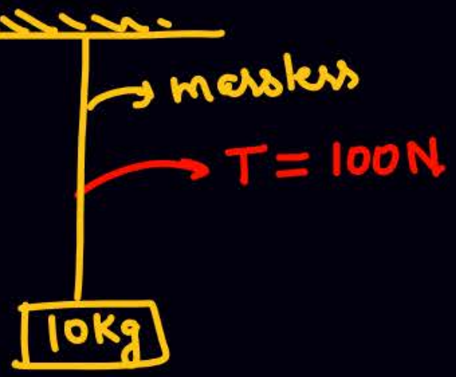

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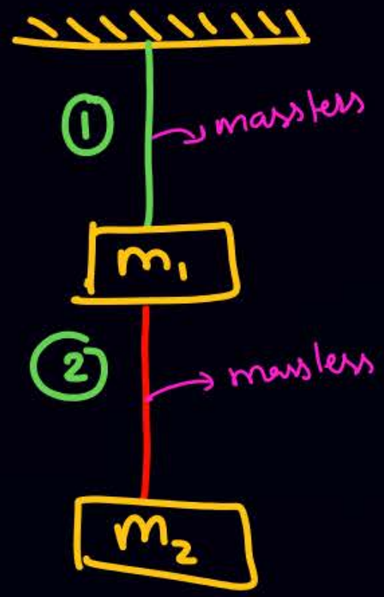
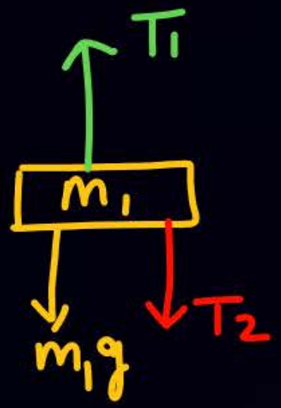
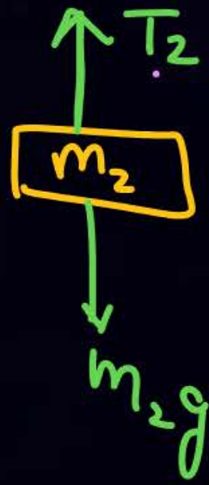


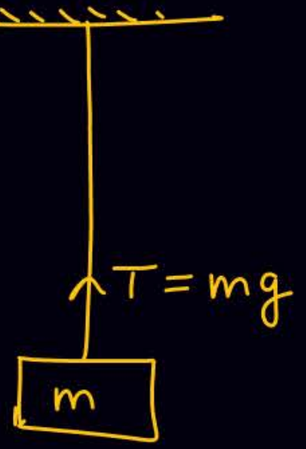


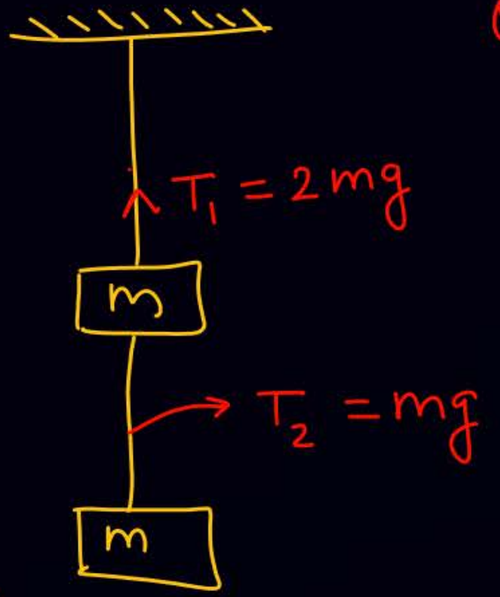
$T_1 = m_1g + T_2$

$T_1 = m_1g + m_2g$

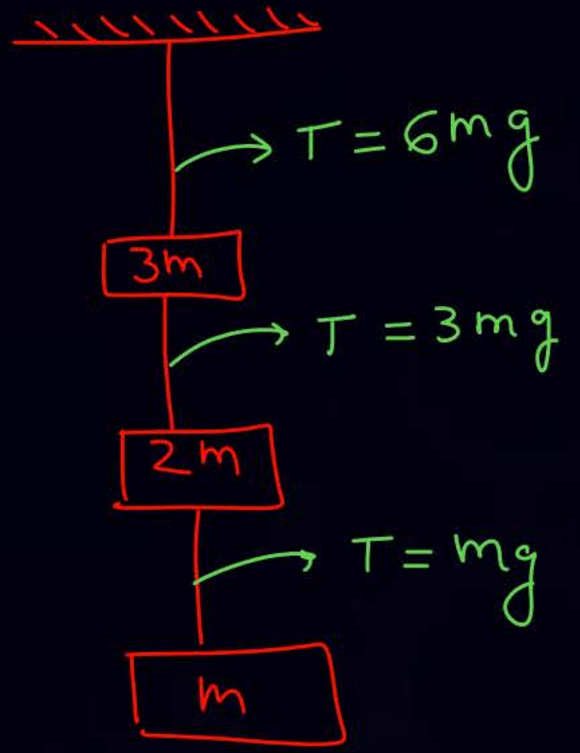


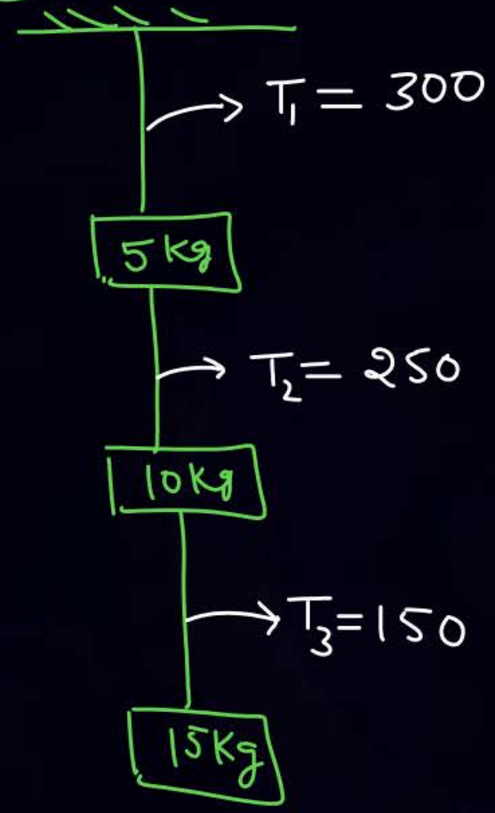
$T_2 = m_2g$

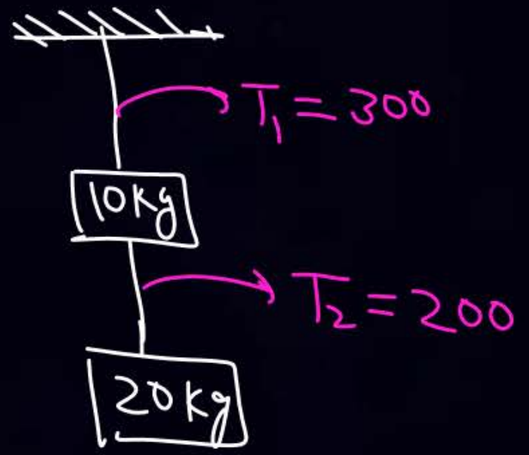
① 

② 

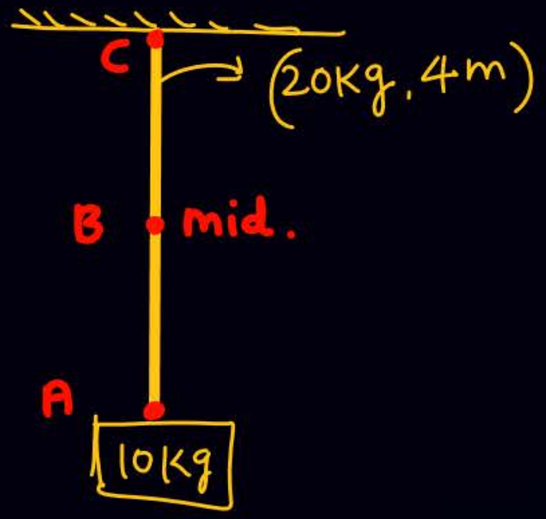
(SKC Tarayu Methode)

Q 

④ 

⑤ 

(6)

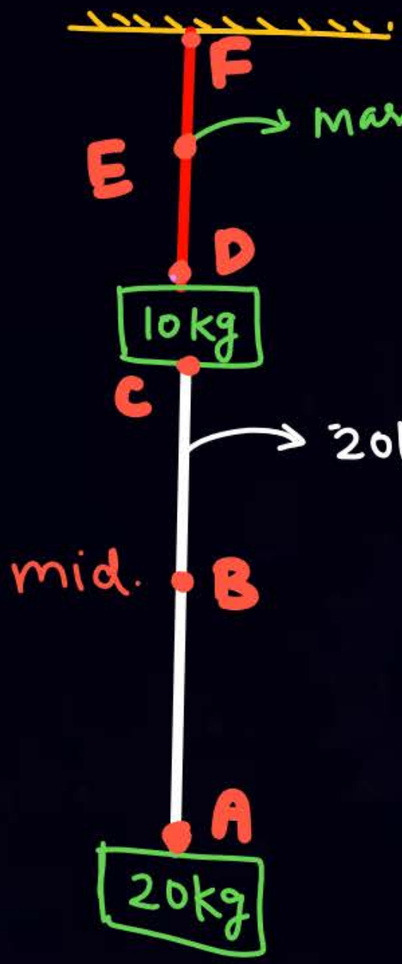


$T_A = 100$

$T_B = T_{mid} = (10+10) \times g = 200$

$T_C = (20+10)g = 300$

(7)



$T_A = 200\ N$

$T_B = 300\ N$

$T_C = 400\ N$

$T_D = 500\ N$

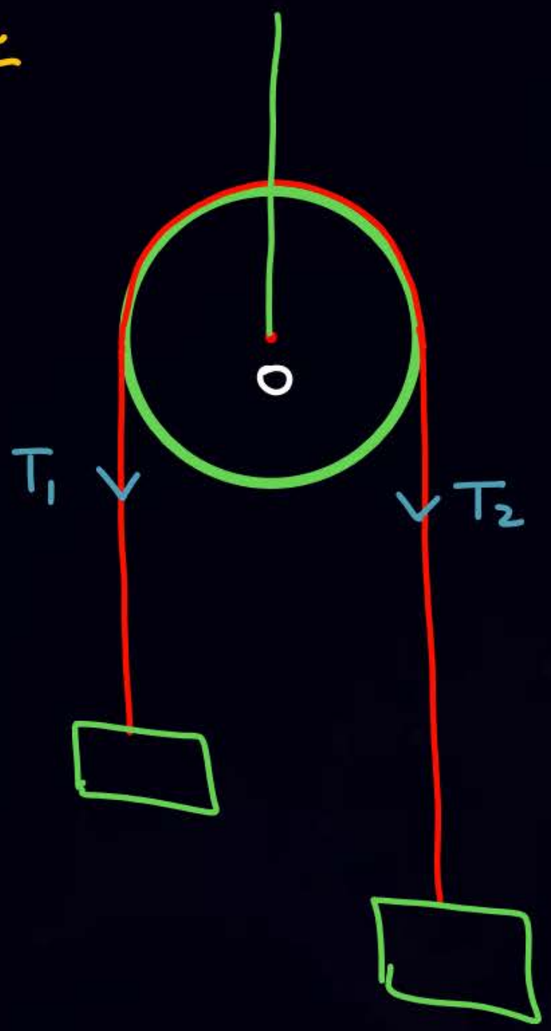
$T_E = 500\ N$

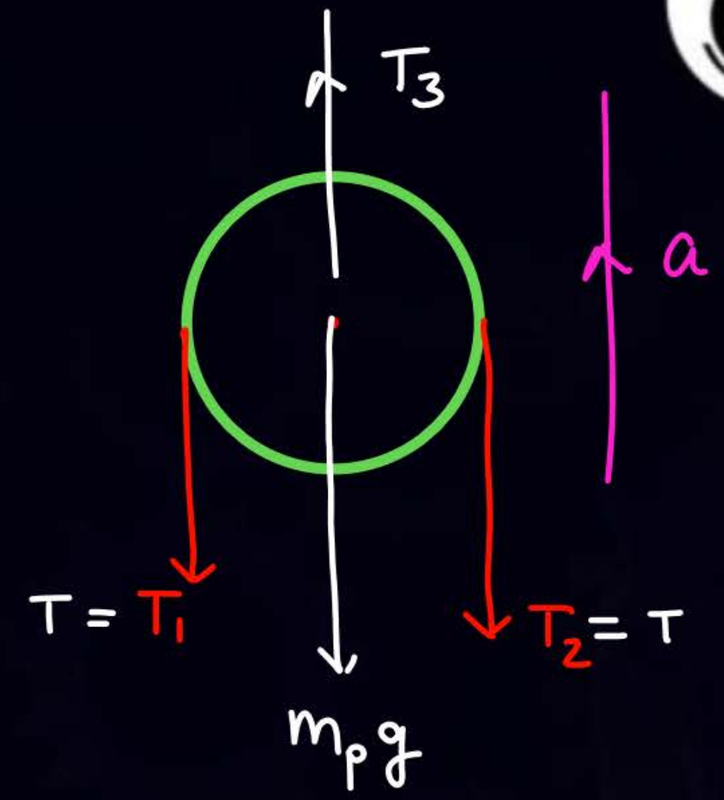
$T_F = 500\ N$

pulley system / Atwood machine

Ideal pulley (NLM)

- massless
- there is no friction blw pulley & string.
- $T_1 = T_2$

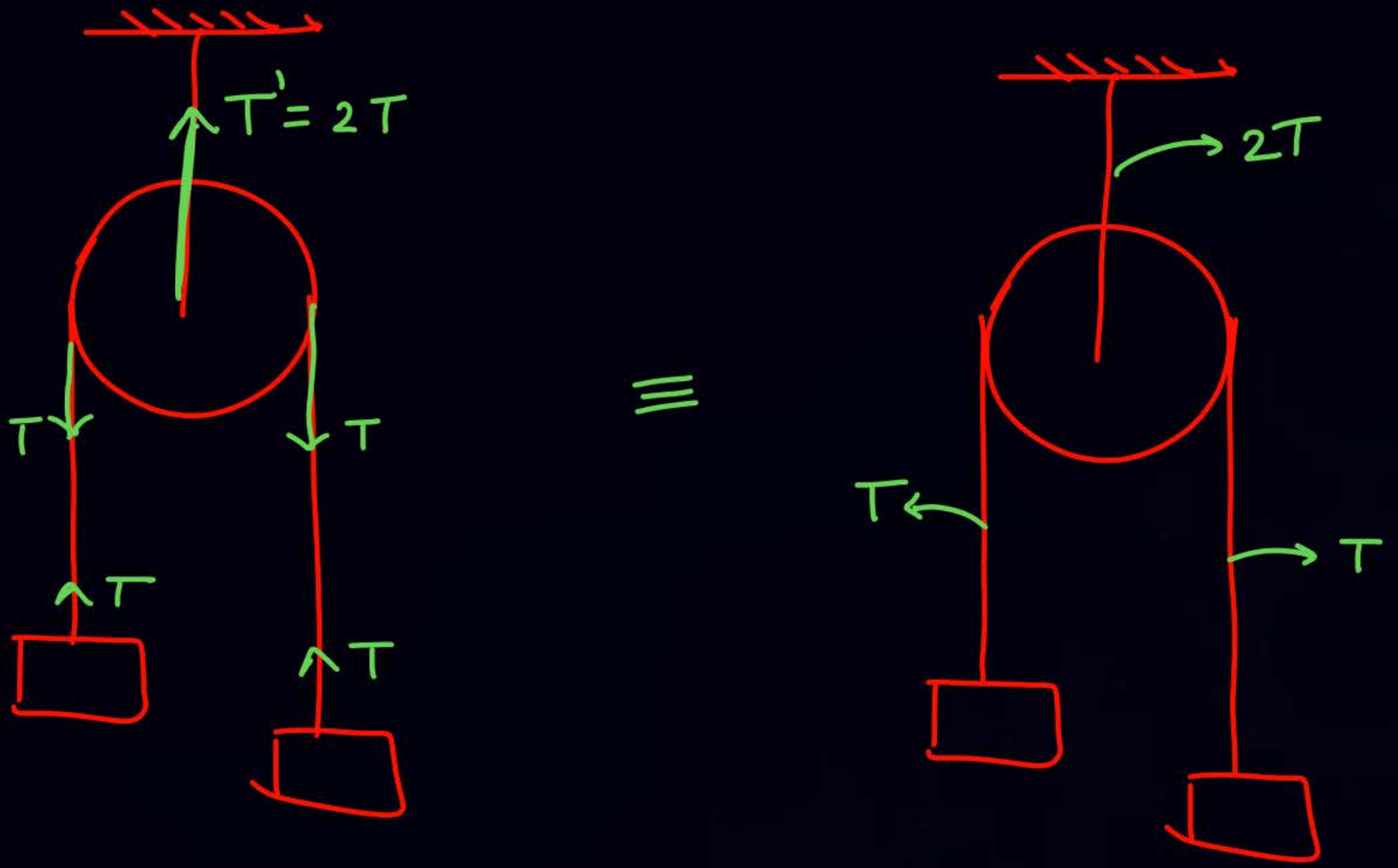




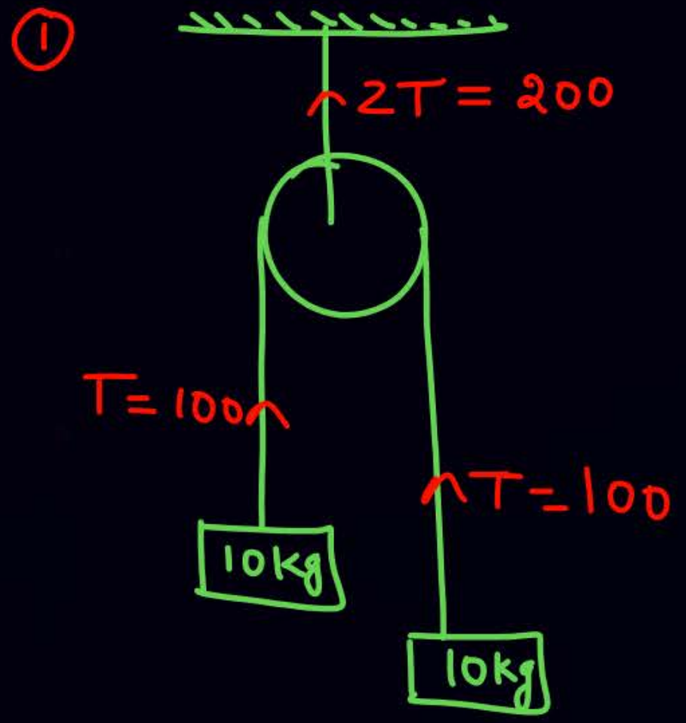
$$T_3 - (T_1 + m_p g + T_2) = m_p a$$

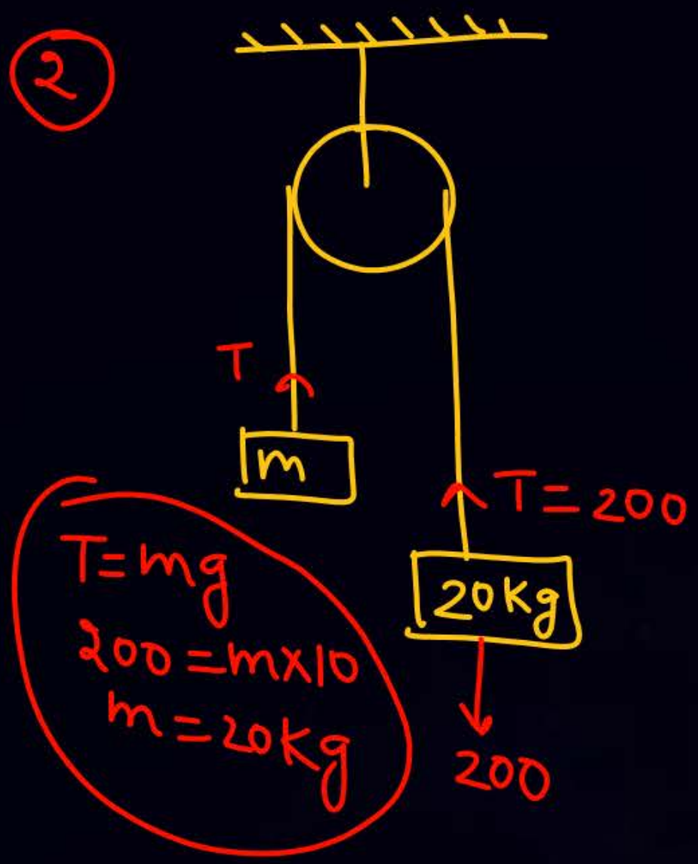
If $m_p \to 0$

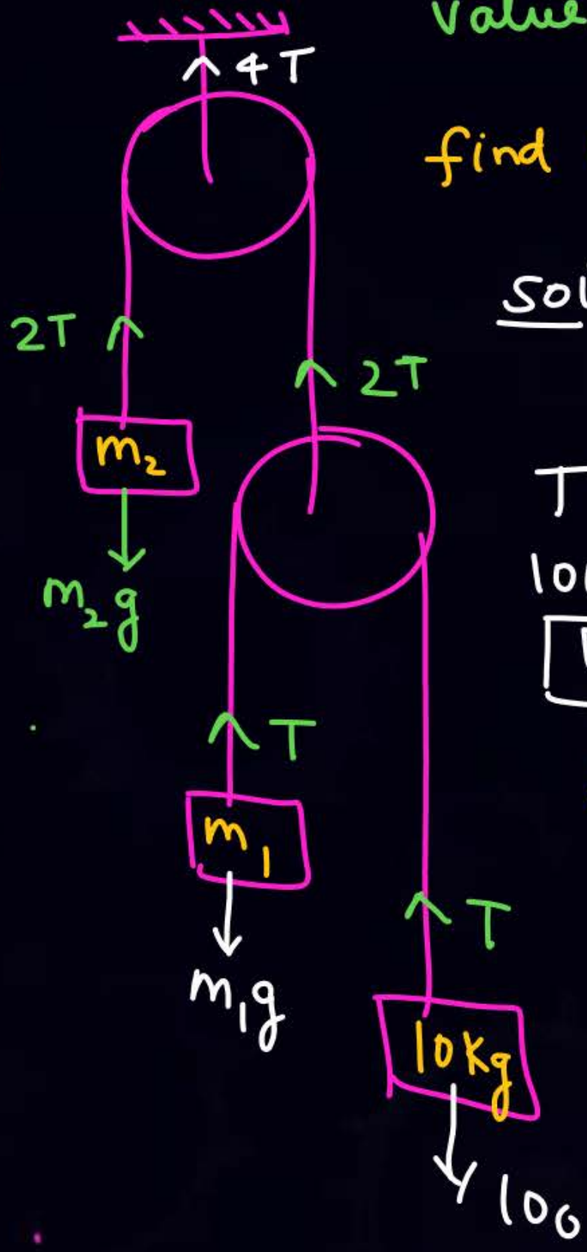
$$T_3 = T_1 + T_2 \Rightarrow T_3 = T + T = 2T$$


T' = 2T
T
T
T
T
≡
2T
T
T

Q If in following que all masses are in equilibrium. Find Unknown value.







find m_1 & m_2

Sol^

$T = 100$

$T = m_1 g$

$100 = m_1 \times 10$

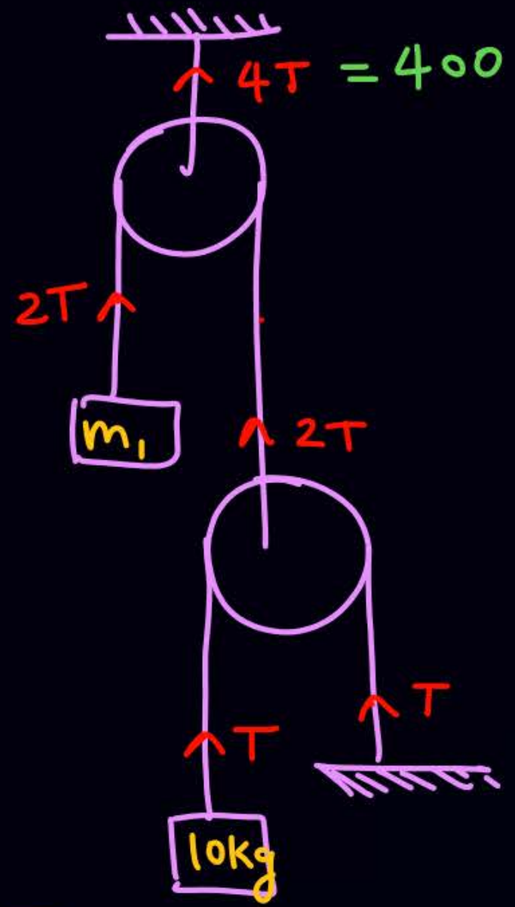
$m_1 = 10kg$

$2T = m_2 g$

$200 = m_2 \times 10$

$m_2 = 20kg$

(4)



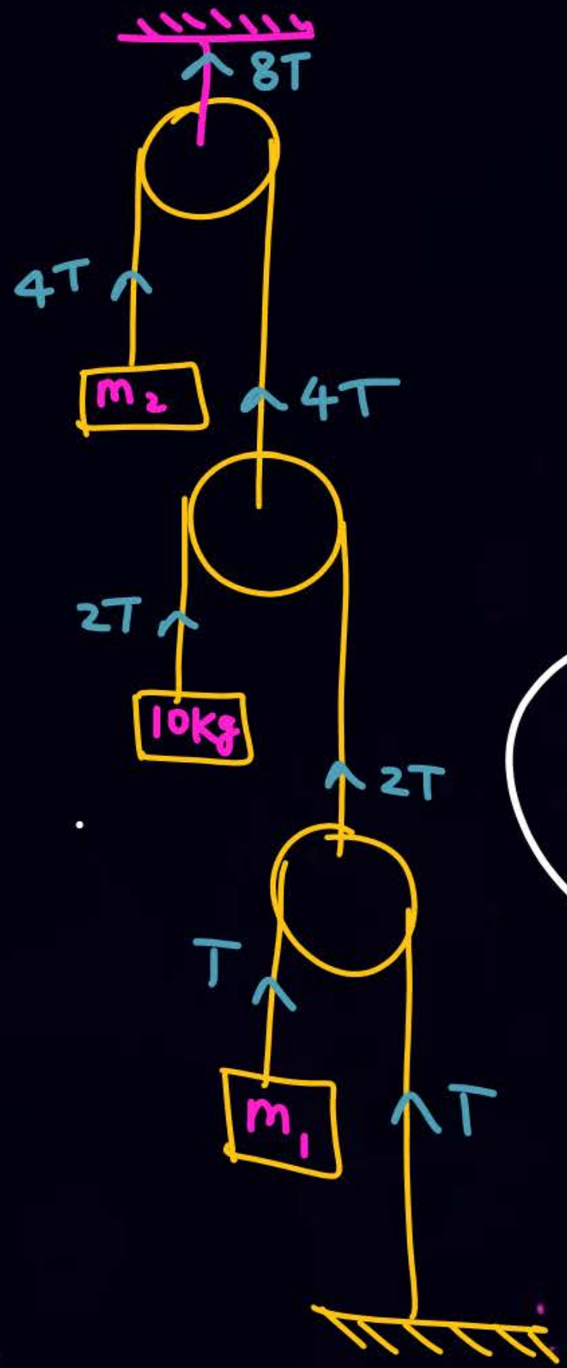
$T = 100$

$2T = m_1 g$

$2 \times 100 = m_1 \times 10$

$m_1 = 20\,kg$

(5)



$T = m_1 g$

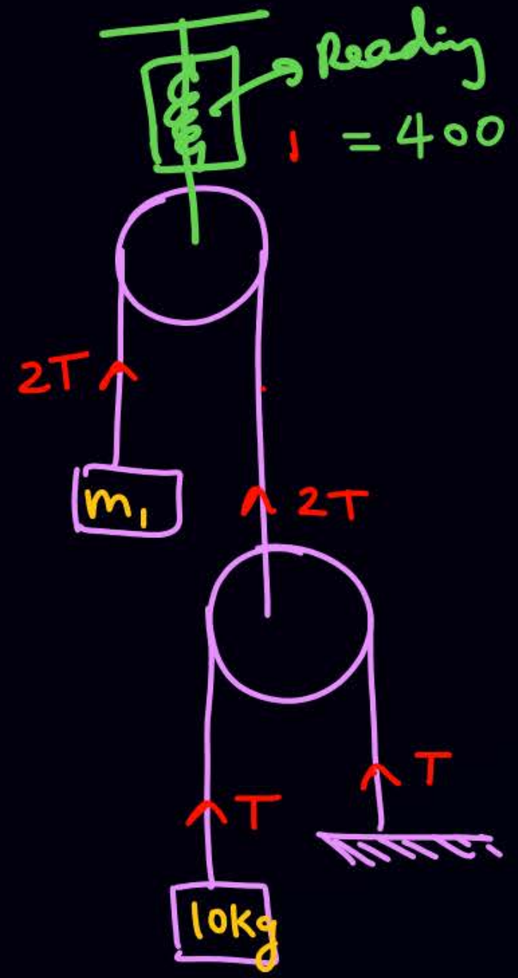
$2T = 100$

$4T = m_2 g$

$m_1 = 5\,kg$

$m_2 = 20\,kg$

④



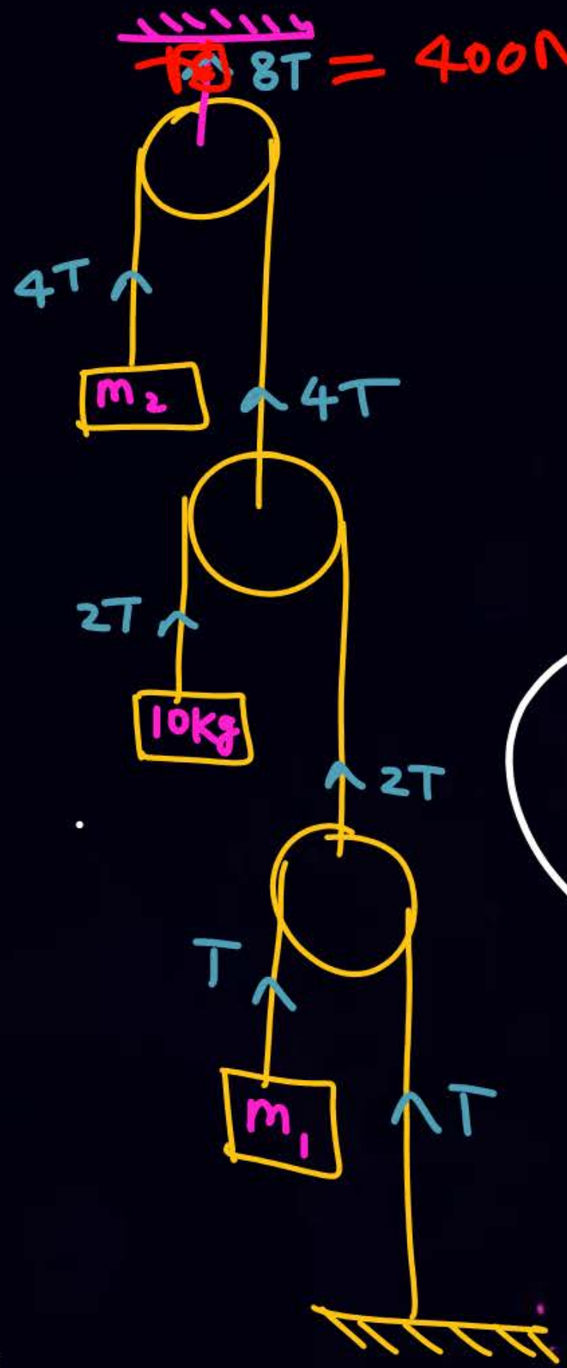
T=100

$2T = m_1 g$

$2 \times 100 = m_1 \times 10$

$m_1 = 20kg$

⑤



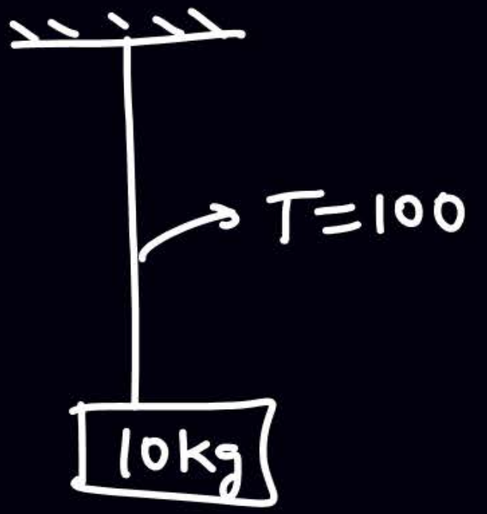
$T = m_1 g$

$2T = 100$

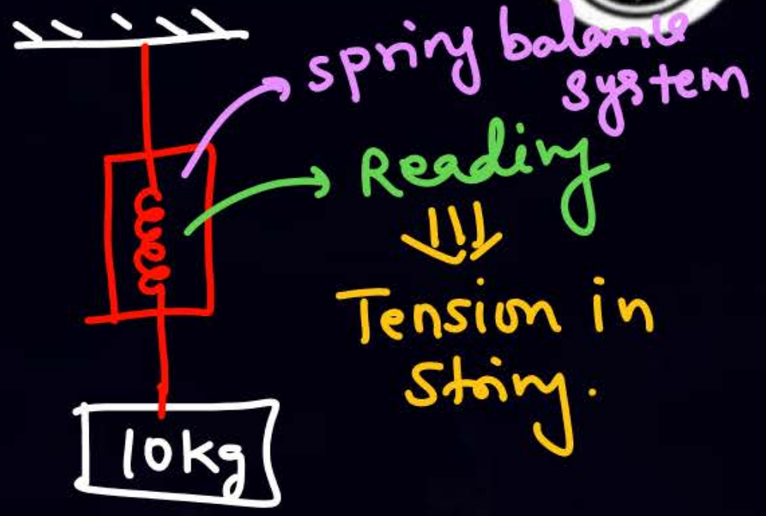
$4T = m_2 g$

$m_1 = 5kg$

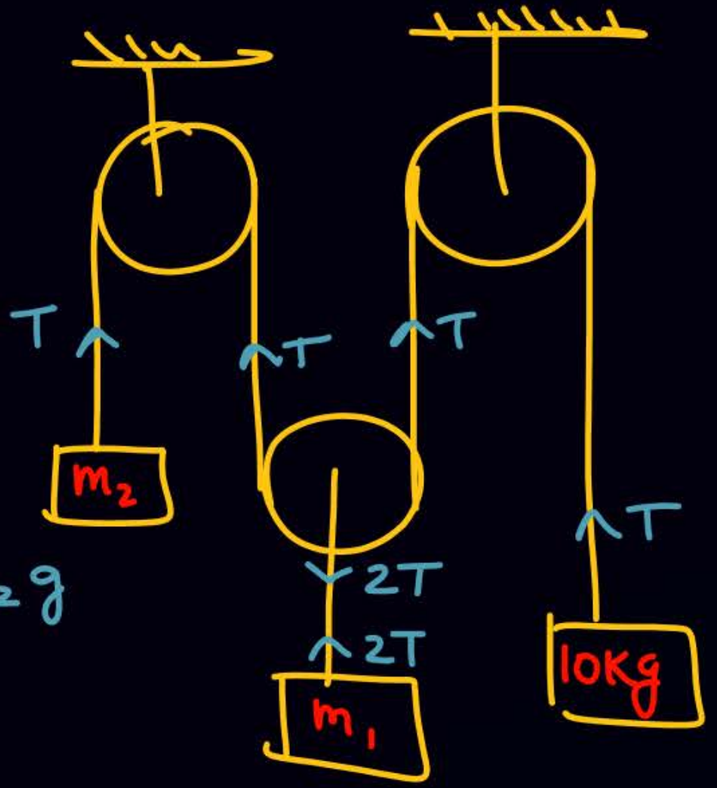
$m_2 = 20kg$



≡ Isko puchne ka ek aur tareeka



(6)



$T = m_2 g$

$T = 100$

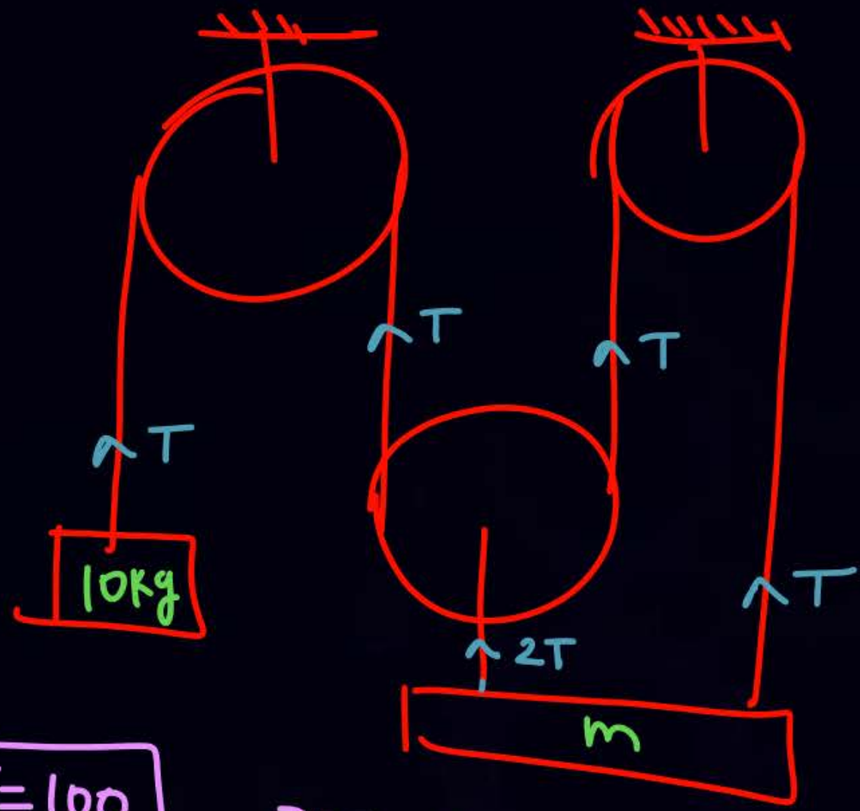
$T = m_2 g$

$2T = m_1 g$

$m_2 = 10\,kg$

$m_1 = 20\,kg$

(7)

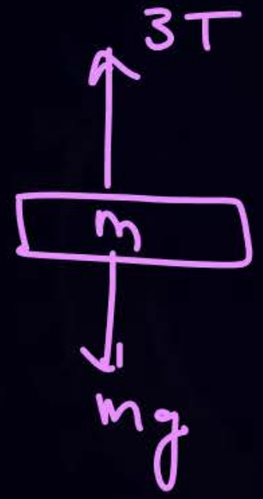


$T = 100$

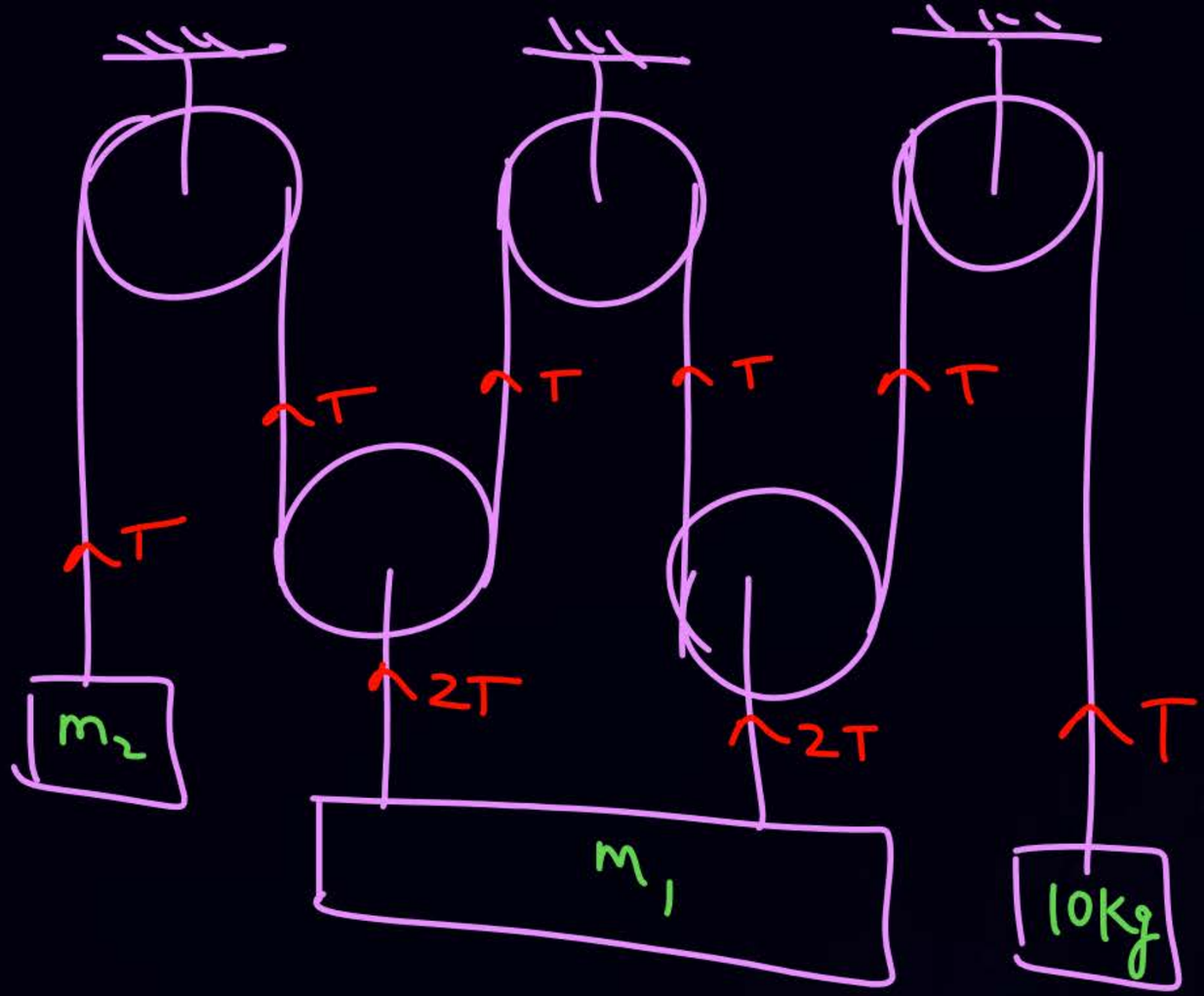
$3T = mg$

$300 = mg$

$m = 30\,kg$



(8)



$T = m_2 g$

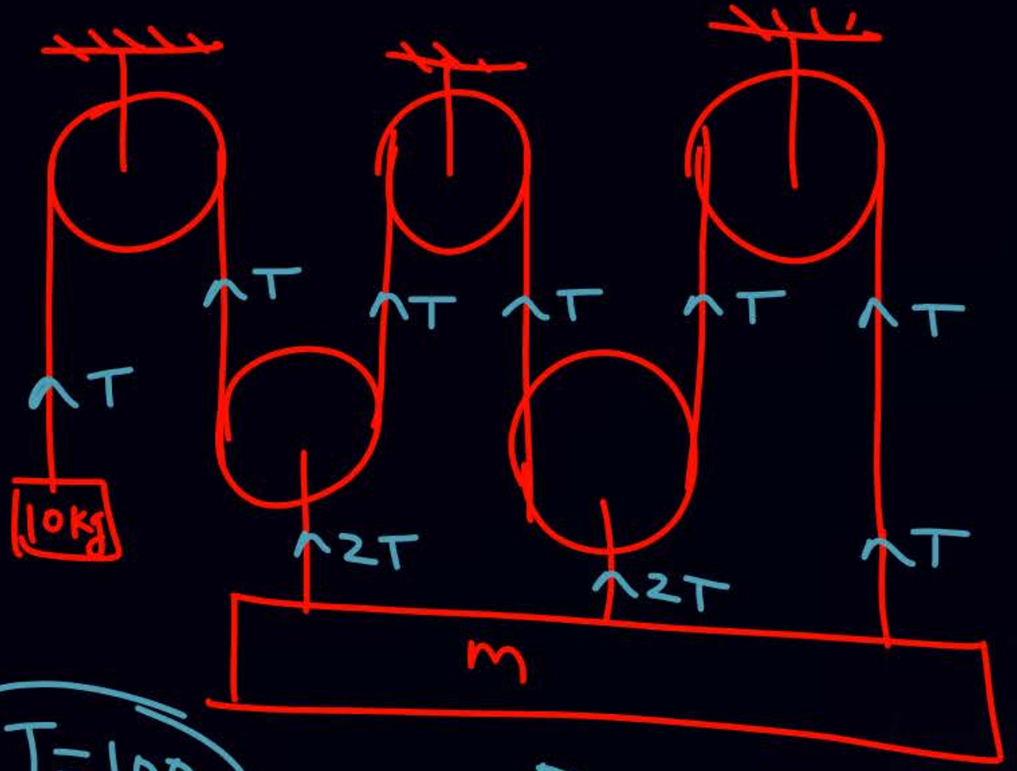
$T = 100$

$4T = m_1 g$

$m_1 = 40kg$

$m_2 = 10kg$

9



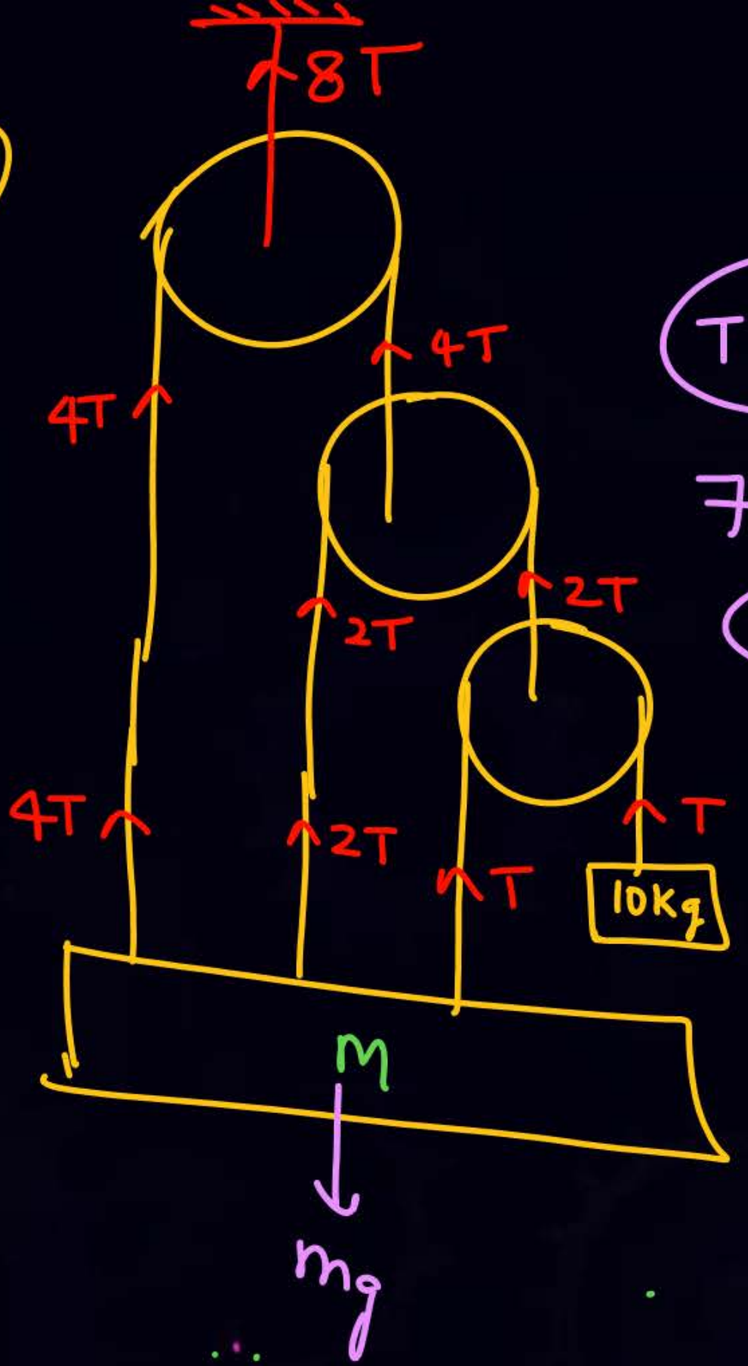
$T = 100$

$5T = mg$

$500 = mg$

$m = 50kg$

10



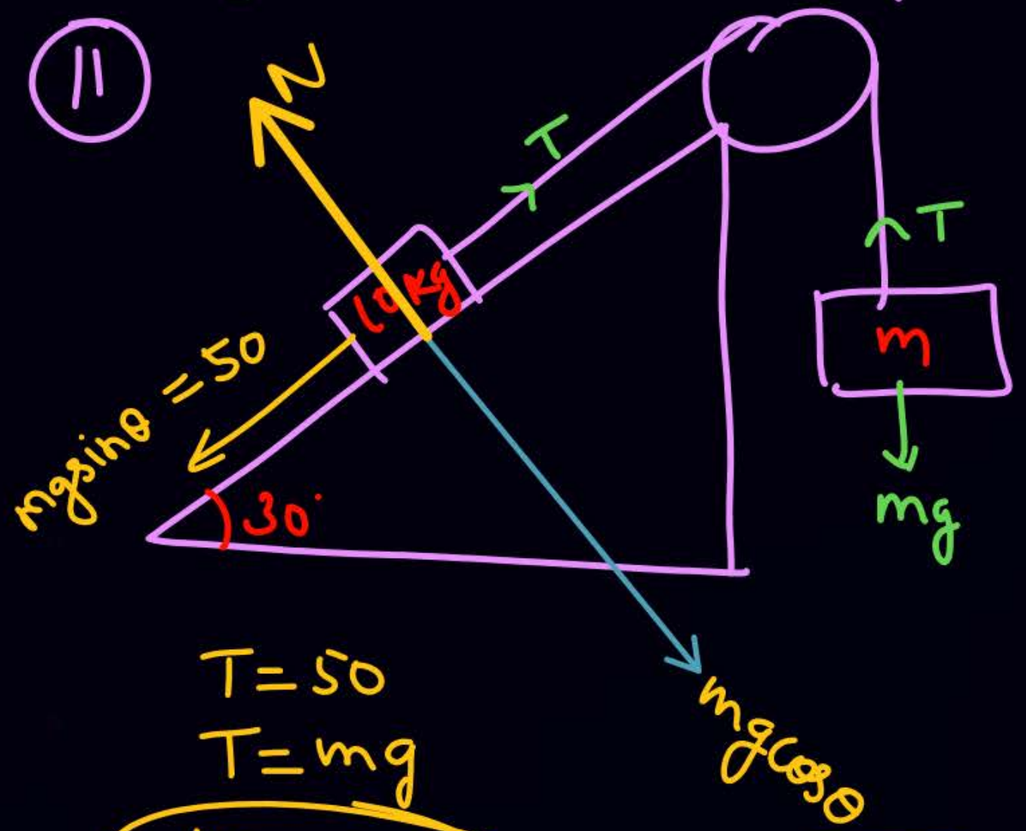
$T = 100$

$7T = mg$

$m = 70kg$

All masses are in equilibrium

(11)

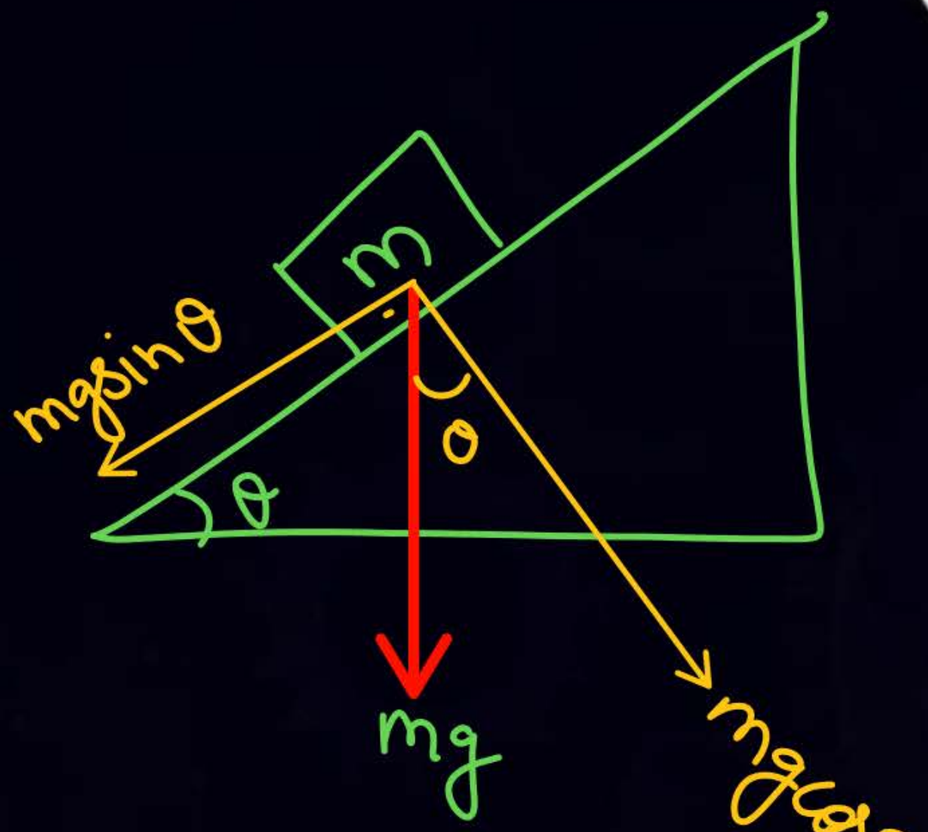


$T = 50$

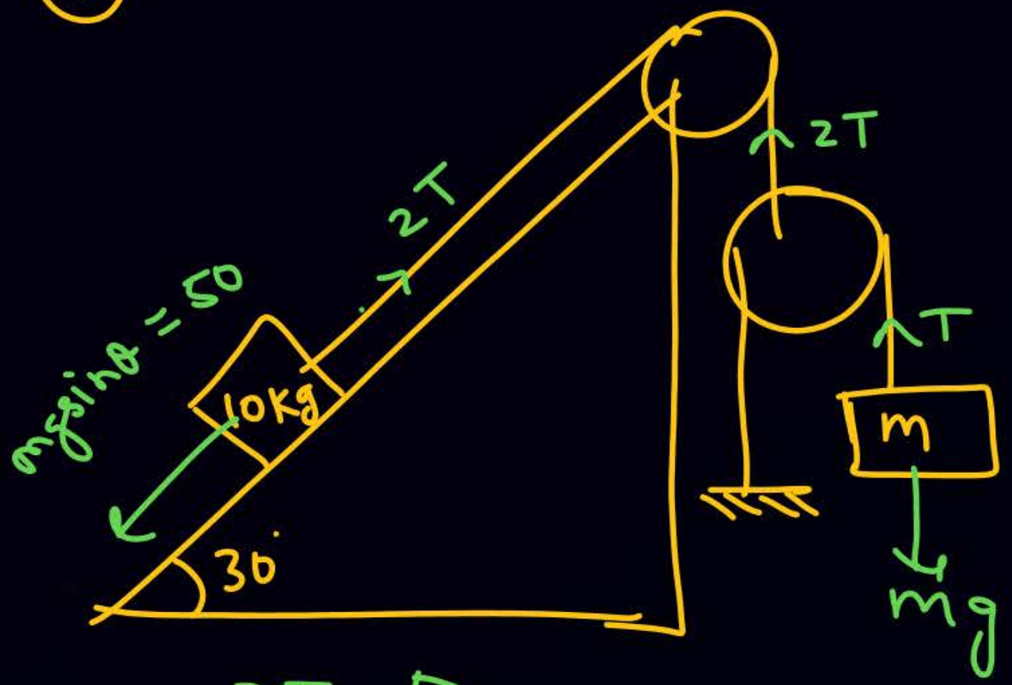
$T = mg$

$m = 5\,kg$

$N = mg\cos\theta$



(12)

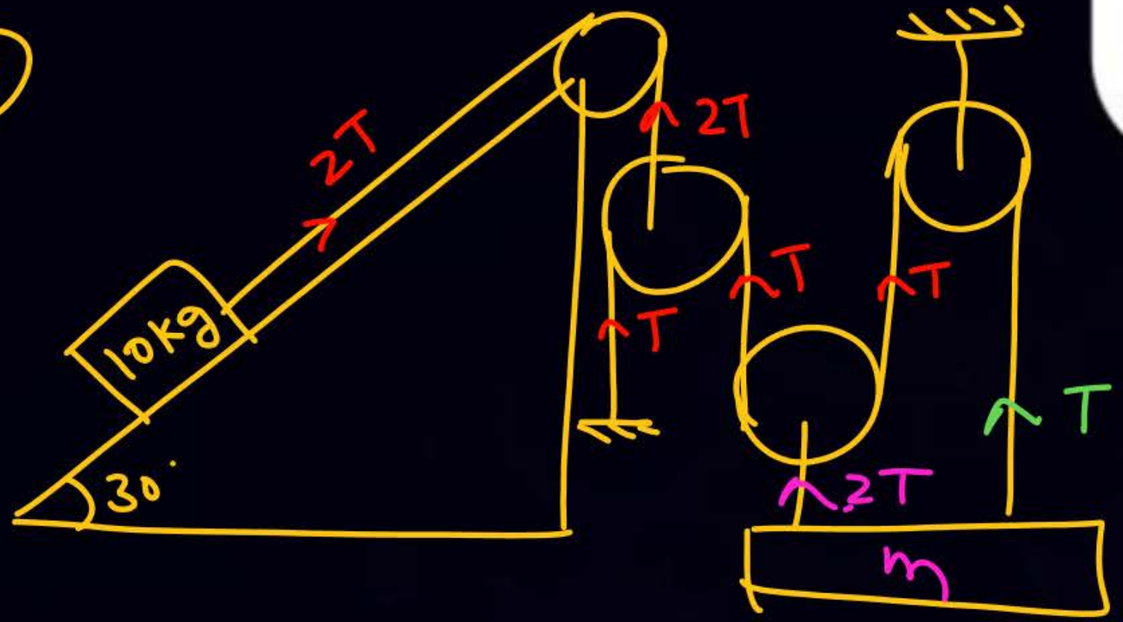


$2T = 50$

$T = 25 = mg$

$m = 2.5\,kg$

(13)



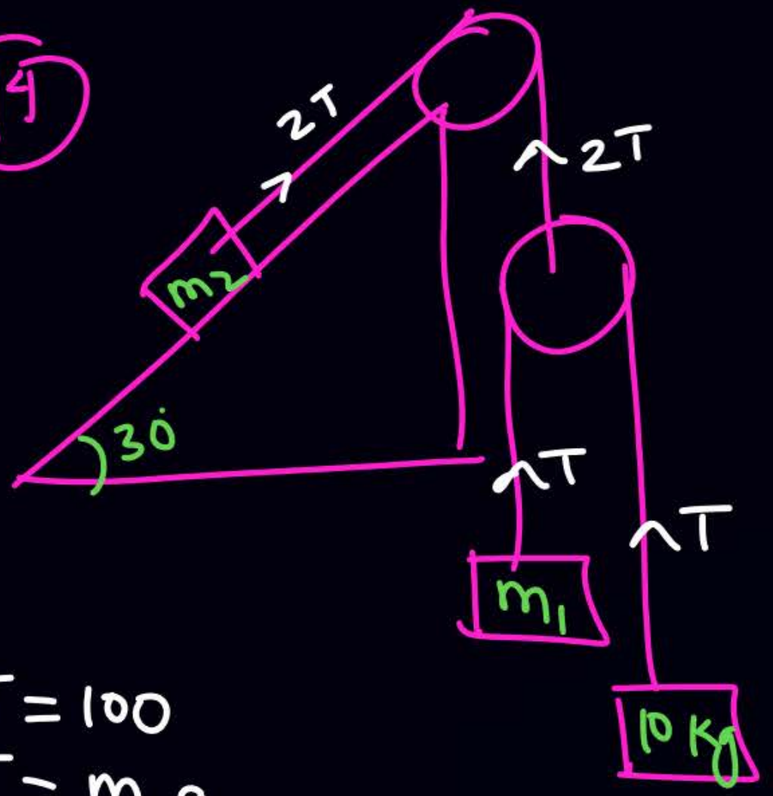
$2T = 50$

$T = 25$

$3T = mg$

$m = 7.5\,kg$

14



$T = 100$

$T = m_1 g$

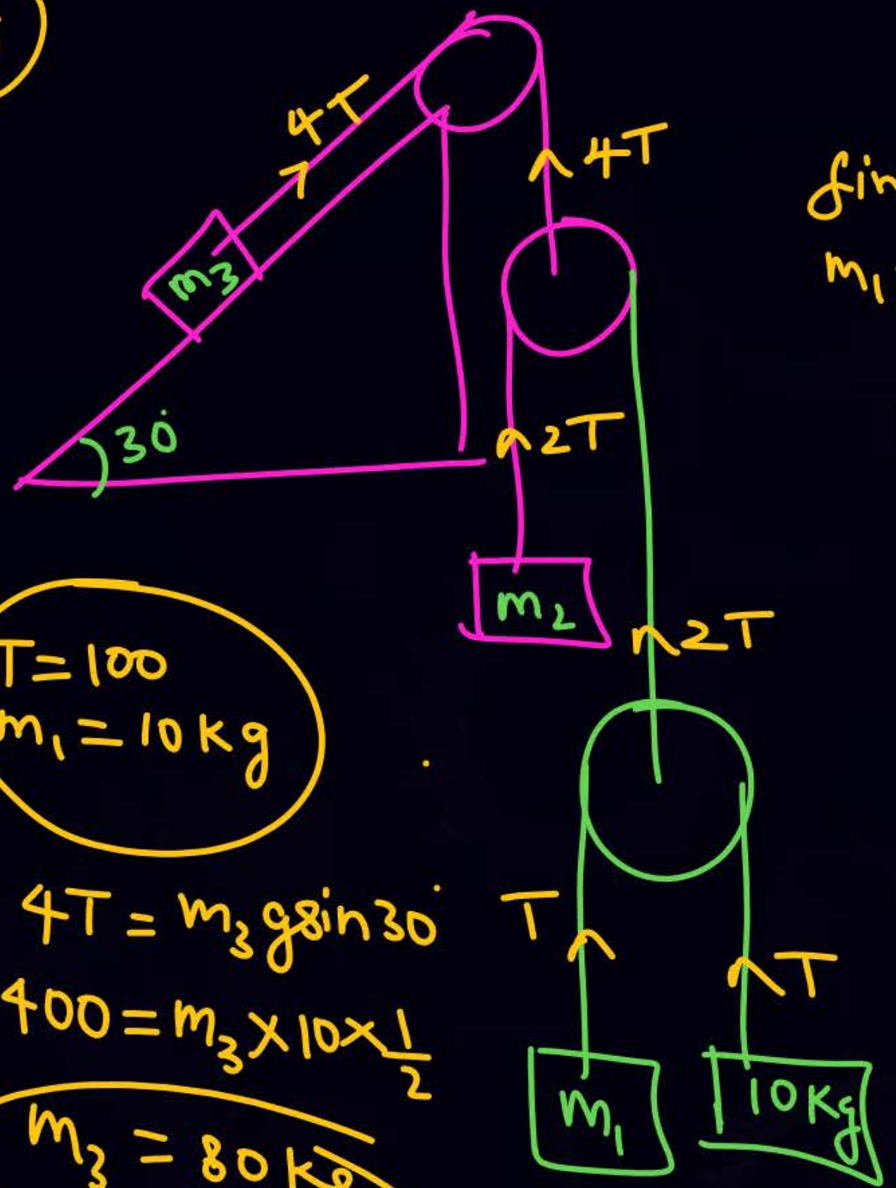
$m_1 = 10\,kg$

$2T = m_2 g \sin 30$

$200 = m_2 \times 10 \times \frac{1}{2}$

$m_2 = 40\,kg$

Q 15



find $m_1 + m_2 + m_3$

$T = 100$

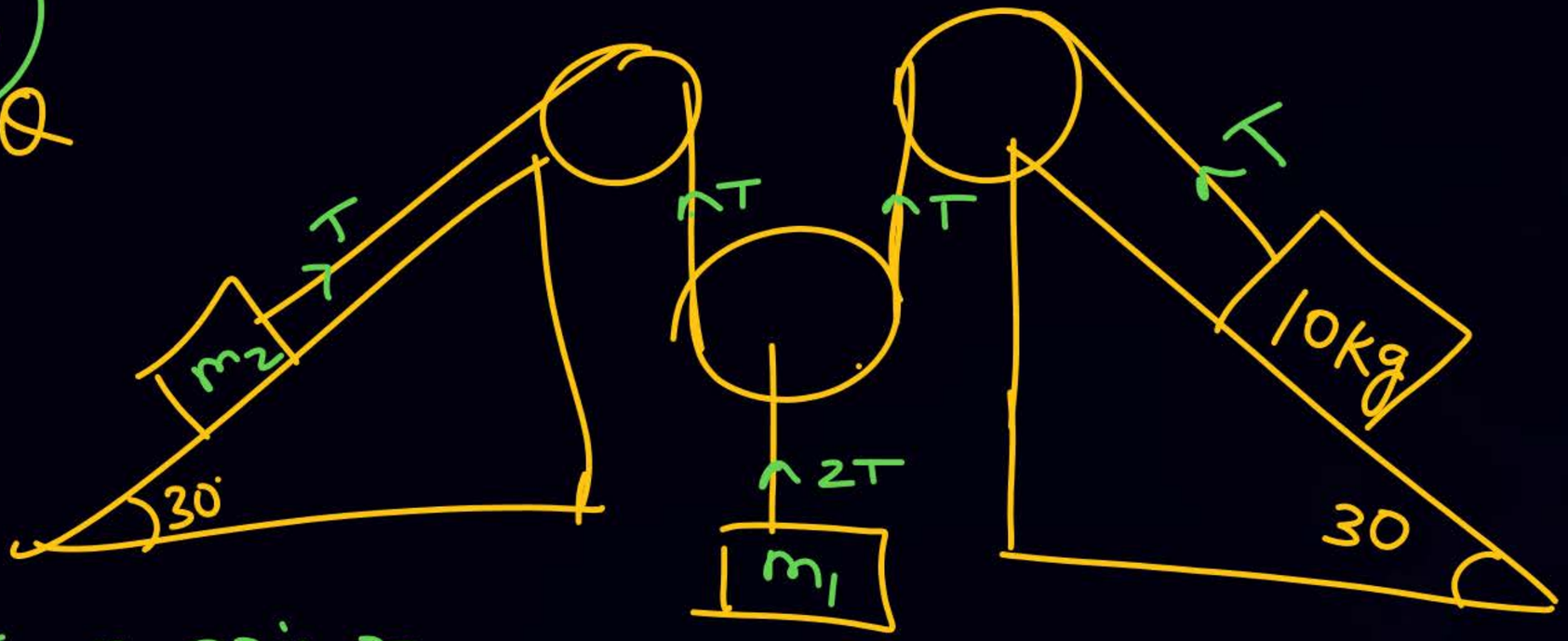
$m_1 = 10\,kg$

$4T = m_3 g \sin 30$

$400 = m_3 \times 10 \times \frac{1}{2}$

$m_3 = 80\,kg$

16 Q



$T = m_2 g \sin 30$

$50 = m_2 \times 10 \times \frac{1}{2}$

$m_2 = 10\,kg$

$2T = m_1 g$

$m_1 = 10\,kg$

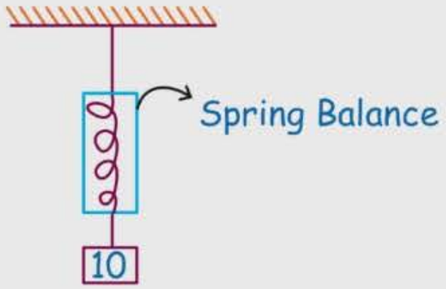
$T = 100 \sin 30 = 50$

PULLEY SYSTEM / ATWOOD MACHINE

Real Pulley

देख भाई ques. मे string मे tension पूछने का एक तरीका होता है reading of spring balance similarly normal पूछने का एक तरीका होता है reading of weighing machine

1



Reading of spring balance
System = T = 100N

2

Reading of weighing machine = N = 200 newton

Homework

- KPP - 21
- Revise notes

THANK YOU