

## DPP – 1 (NLM)

Video Solution on Website:-

<https://physicsaholics.com/home/courseDetails/53>

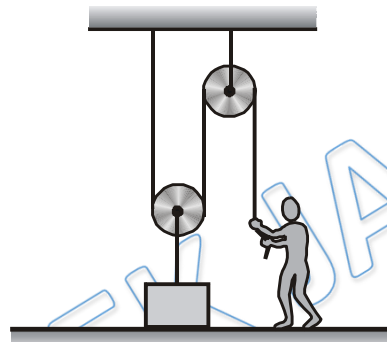
Video Solution on YouTube:-

<https://youtu.be/bzzArA15vcQ>

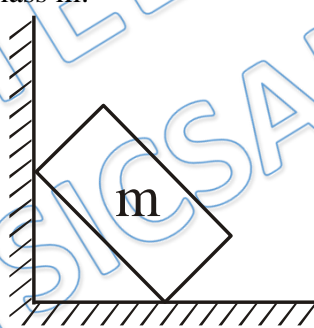
Written Solution on Website:-

<https://physicsaholics.com/note/notesDetails/75>

- Q 1. Draw FBD of both pulleys, man and block:  
(pulleys are massless)

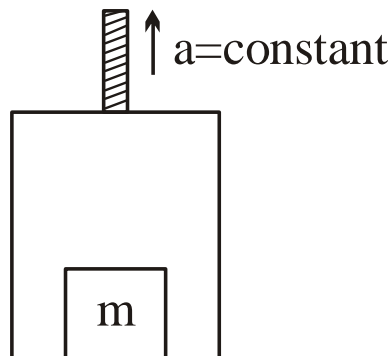


- Q 2. Draw FBD of block of mass  $m$ :

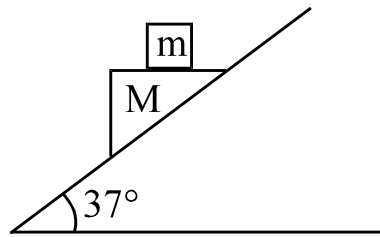


All surface smooth

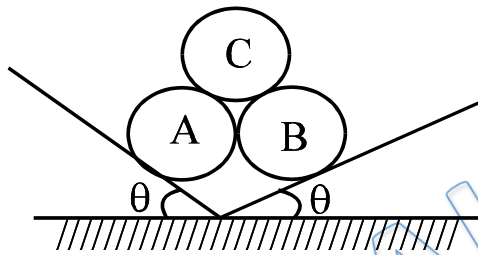
- Q 3. Draw FBD of block of mass  $m$ :



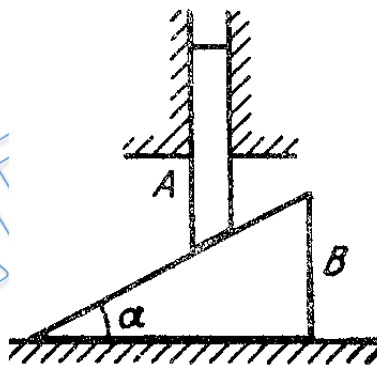
- Q 4. Draw FBD of both the blocks  
(all surfaces are smooth)



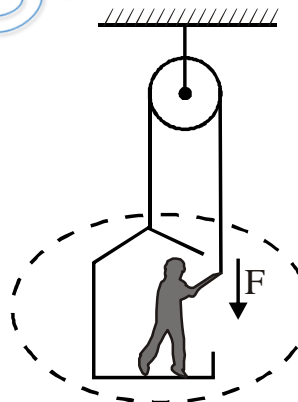
Q 5. Draw FBD of all spheres:



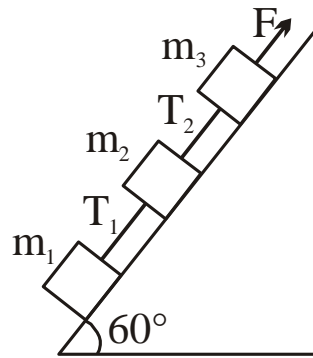
Q 6. Draw FBD of rod A:



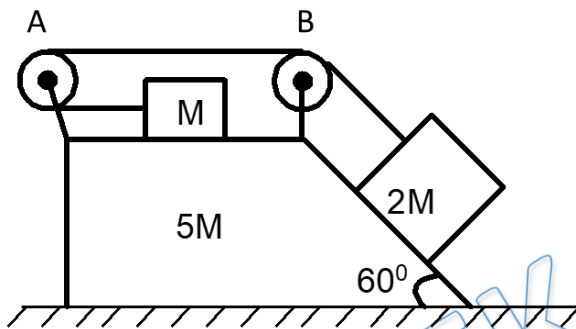
Q 7. Draw FBD of man and cabin:



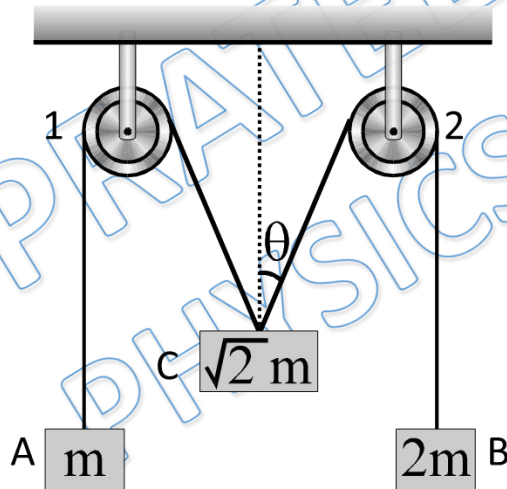
Q 8. Draw FBD of all three blocks & wedge:



Q 9. Draw FBD of block of mass  $2M$  & Pulley B:



Q 10. Draw FBD of block C and pulley 2:



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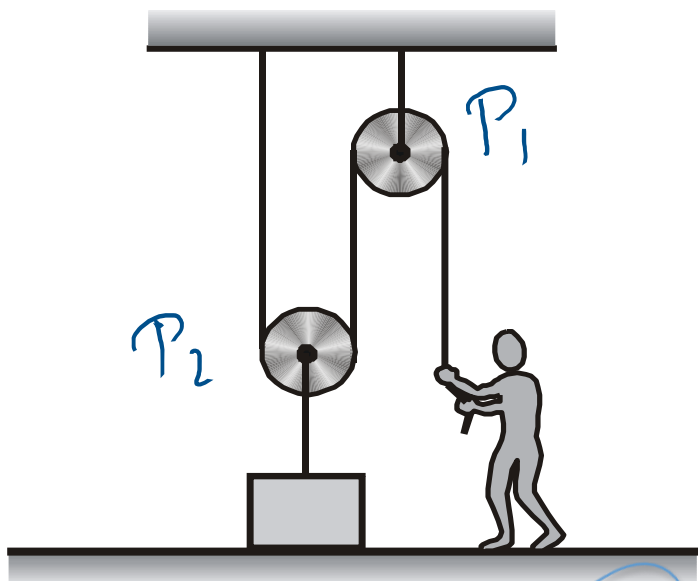


# Written Solution

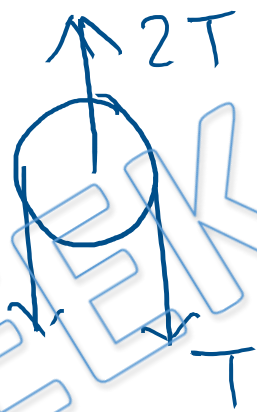
**DPP- 1 NLM of Motion Free Body Diagram**

**By Physicsaholics Team**

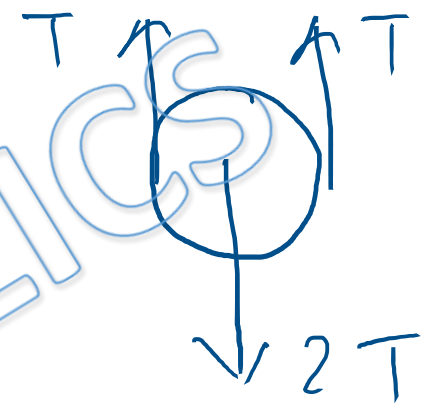
# Solution: 1



F.B.D of  $P_1$



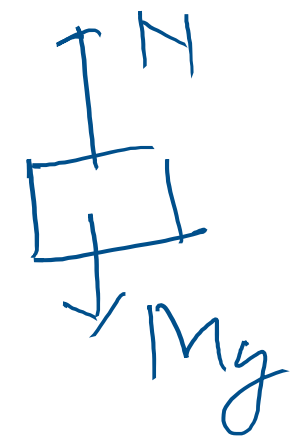
F.B.D of  $P_2$



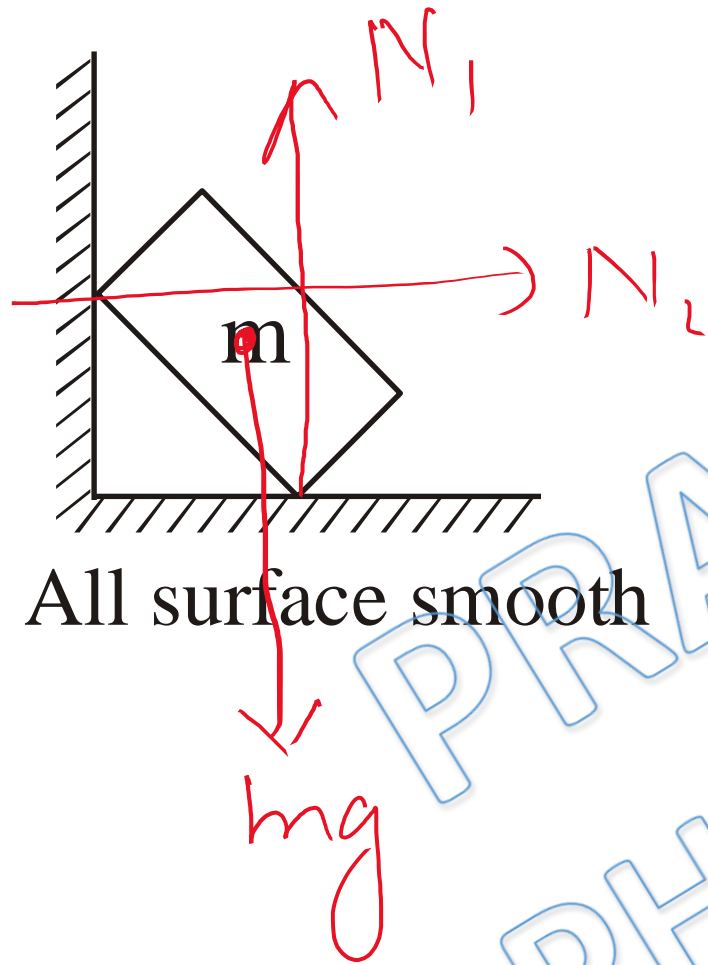
F.B.D of man



F.B.D of block

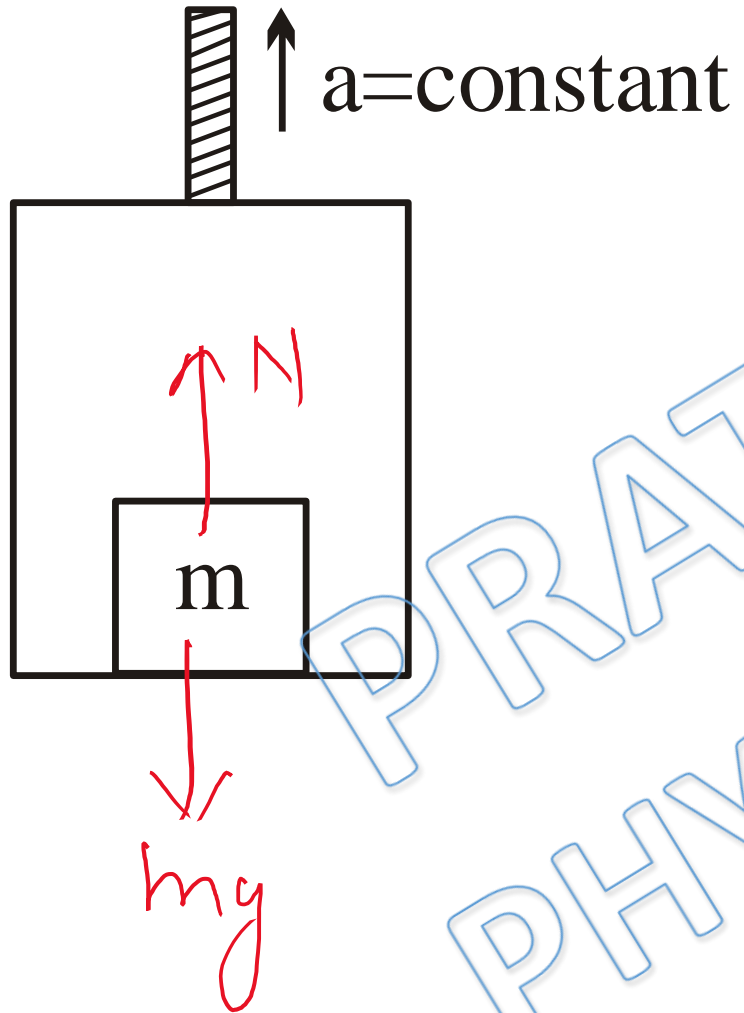


## Solution: 2



PRATEEK JAIN  
PHYSICSAHOLICS

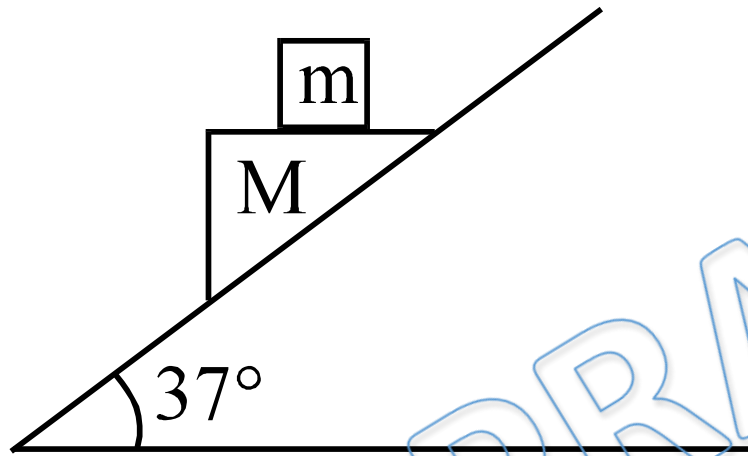
### Solution: 3



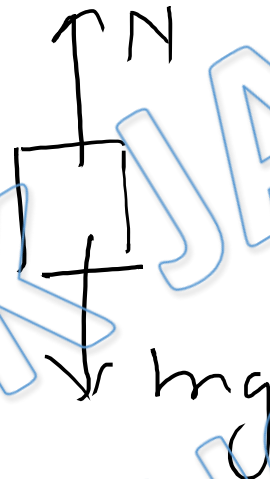
PRATEEK JAIN  
PHYSICSAHOLICS



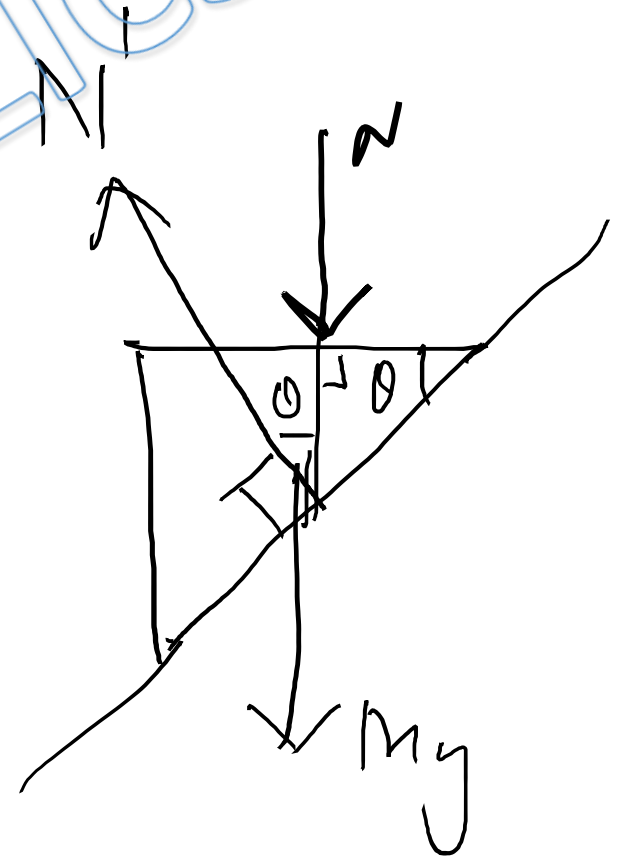
# Solution: 4



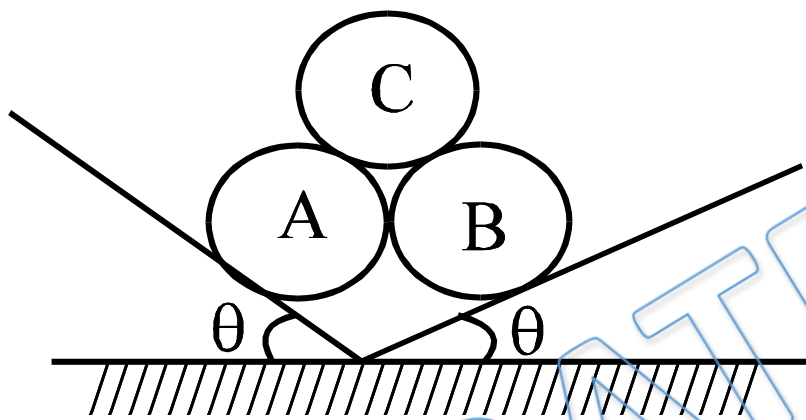
F.B.D of  $m$



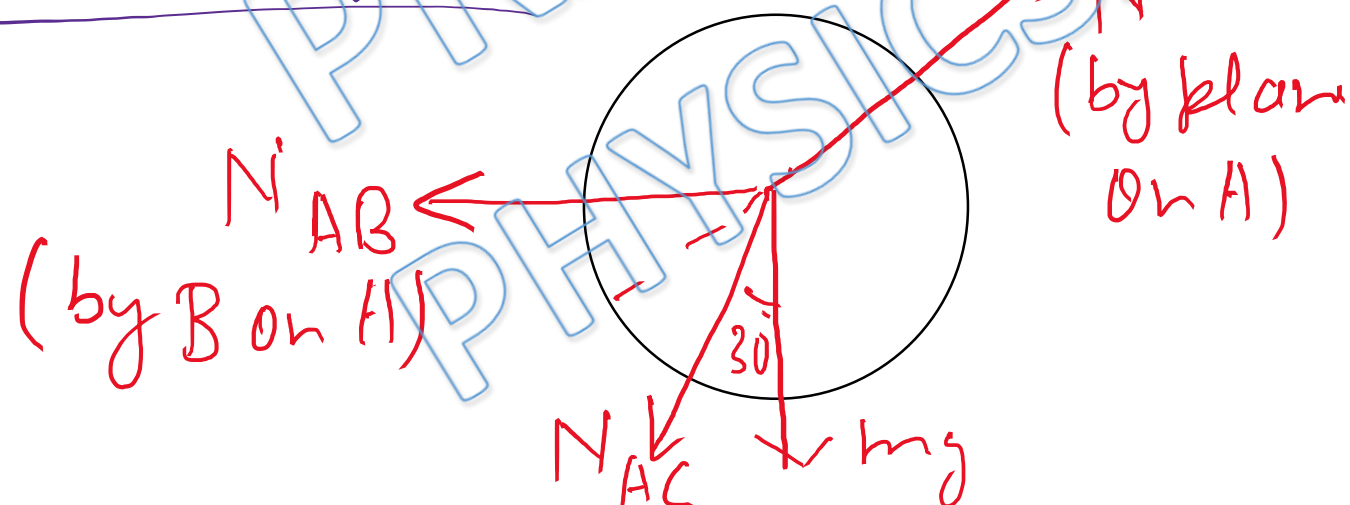
F.B.D of  $M$



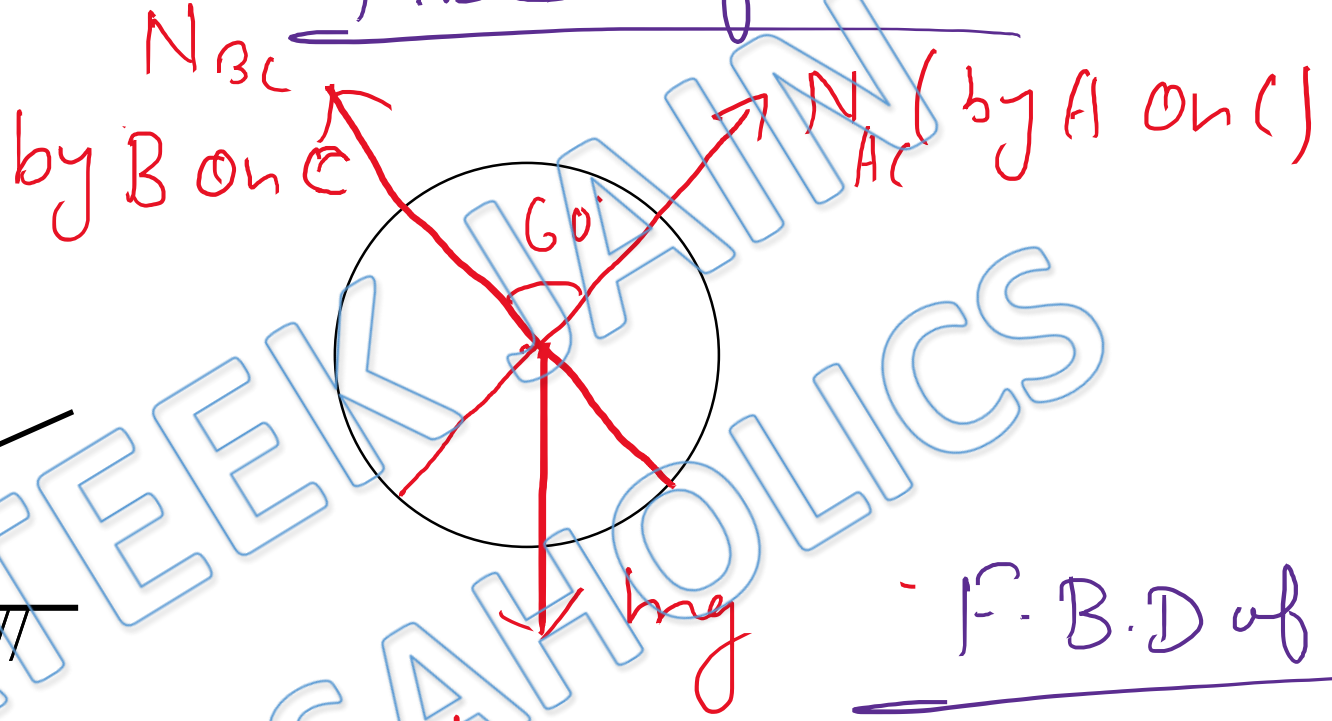
# Solution:5



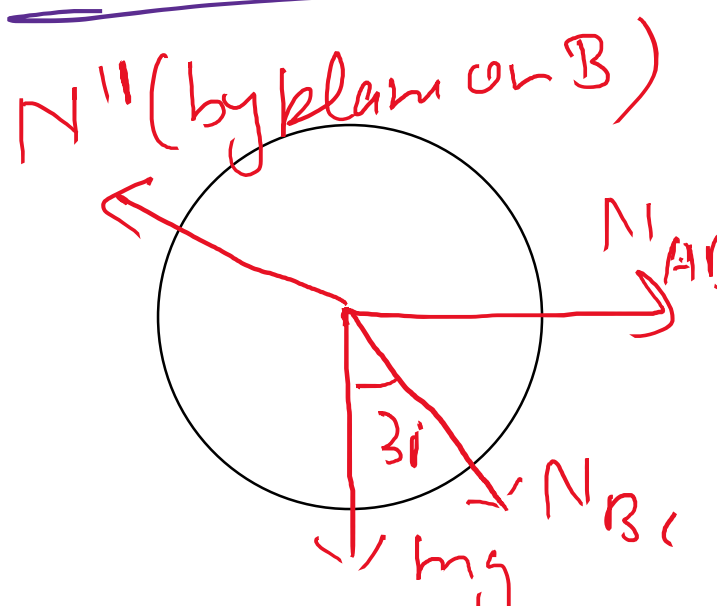
F.B.D of A



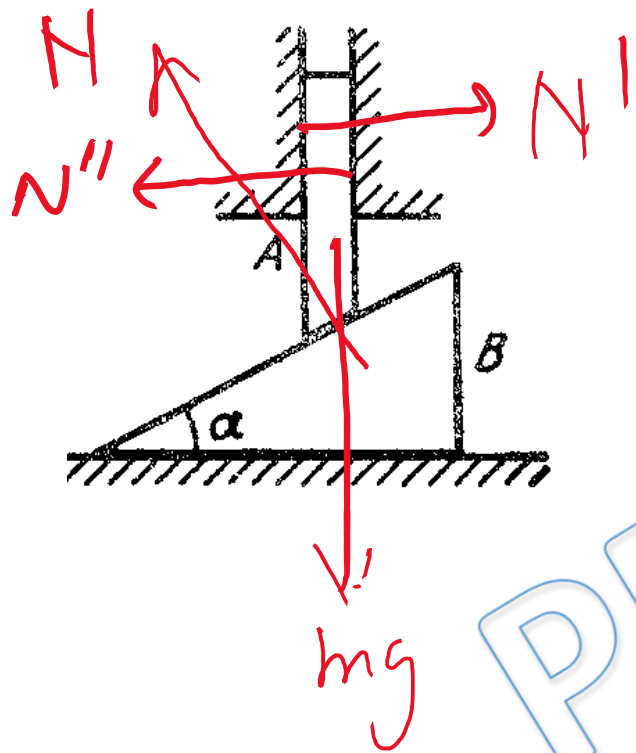
F.B.D of C



F.B.D of B



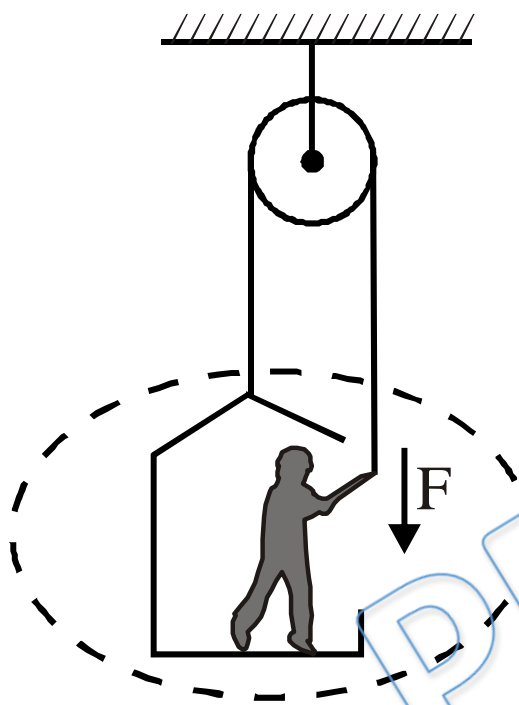
## Solution: 6



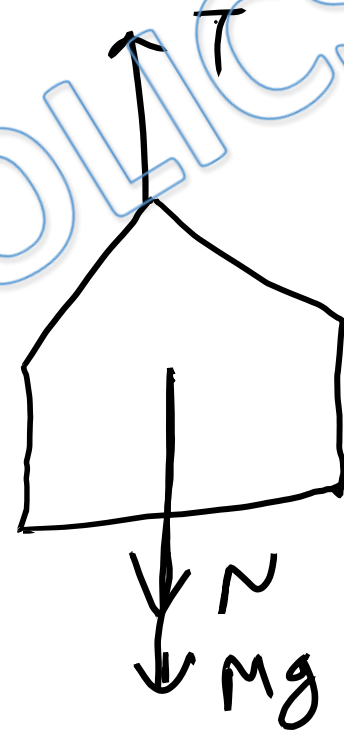
PRATEEK JAIN  
PHYSICSAHOLICS

# Solution:7

F.B.D of man

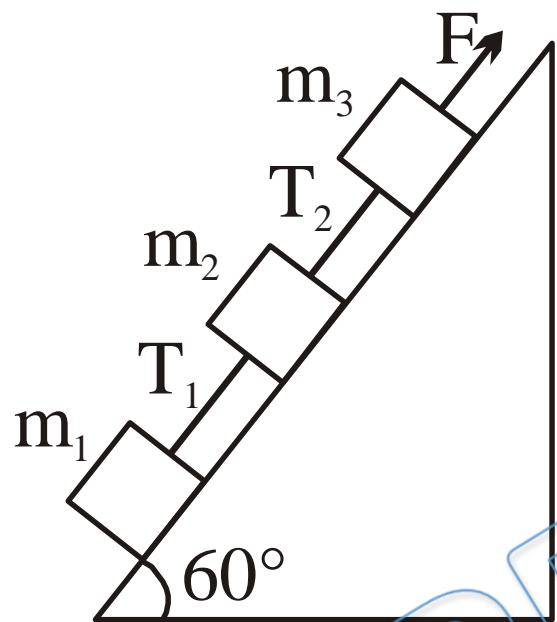


$m = \text{mass of man}$

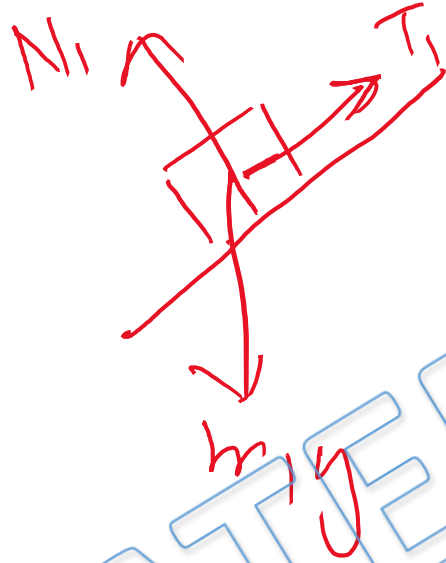


$M = \text{mass of cabin.}$

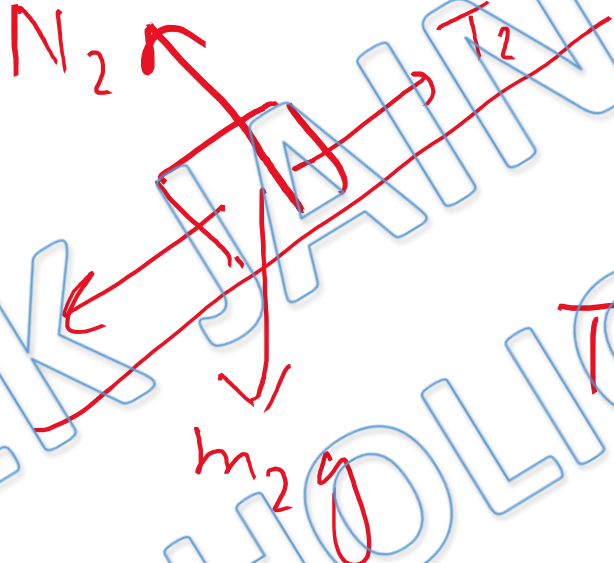
# Solution:8



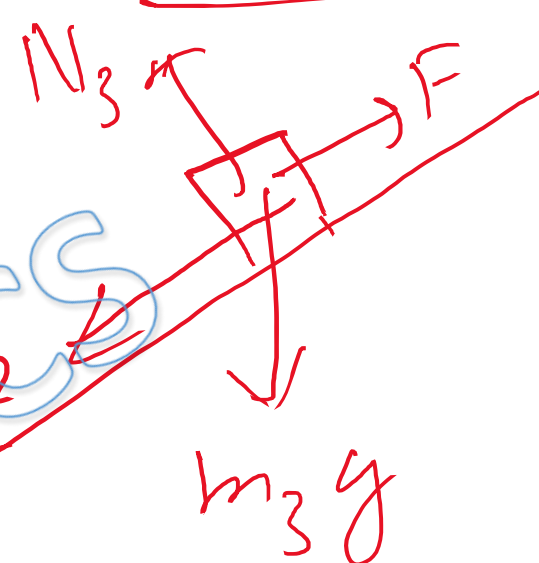
F.B.D of  $m_1$



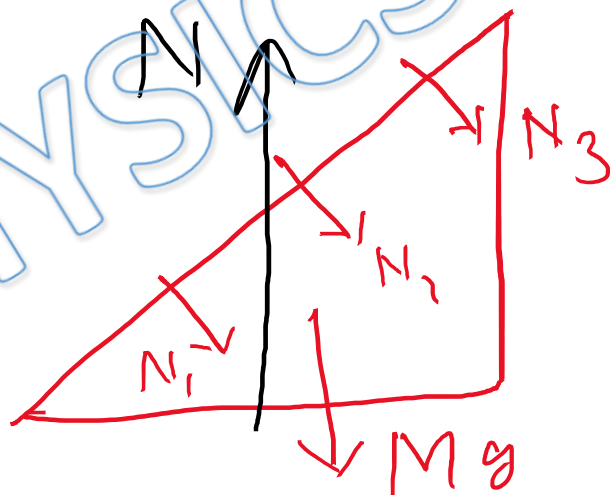
F.B.D of  $m_2$



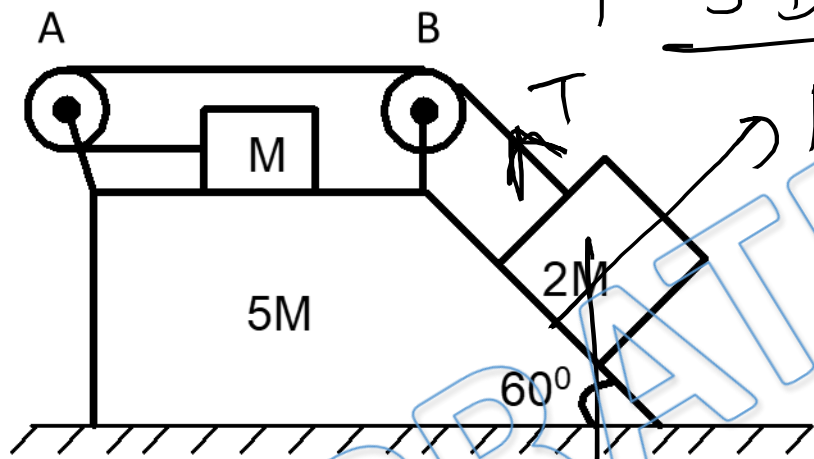
F.B.D of  $m_3$



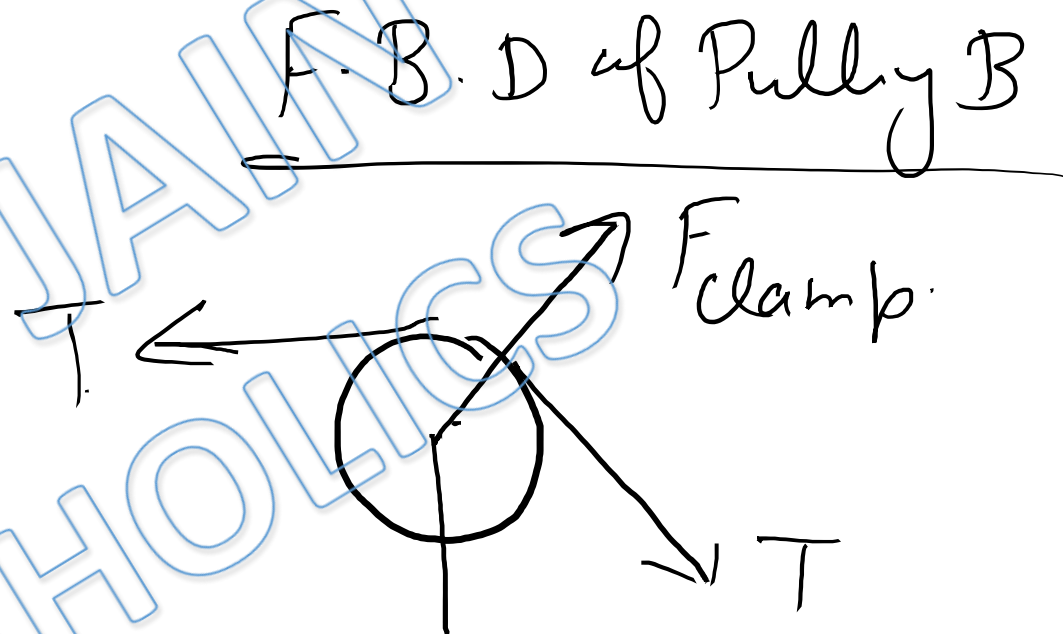
F.B.D of wedge  $\rightarrow$



# Solution:9

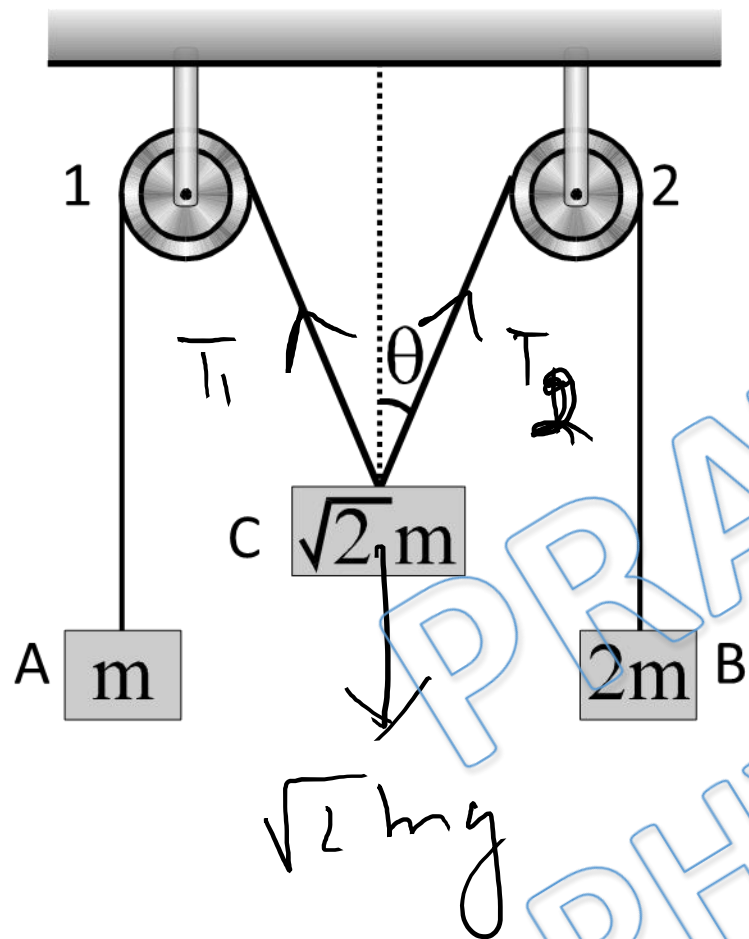


F.B.D of  $2M$

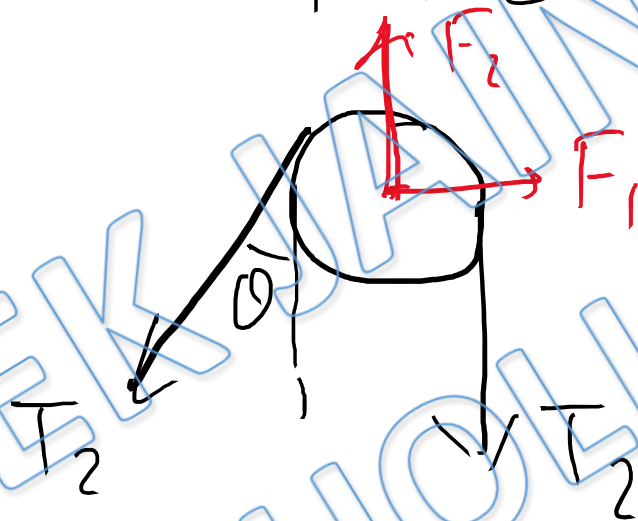


F.B.D of Pulley B

# Solution:10



F.B.D of pulley 2



$F_1$  &  $F_2$   
are forces  
by clamp  
on pulley

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