



SIR PRATEEK JAIN

- . Founder @ Physicsaholics
- . Top Physics Faculty on Unacademy (IIT JEE & NEET)
- . 8+ years of teaching experience in top institutes like FIITJEE (Delhi, Indore) , CP (KOTA) etc.
- . Produced multiple Top ranks.
- . Research work with HC Verma sir at IIT Kanpur
- . Interviewed by International media.



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on YouTube:-

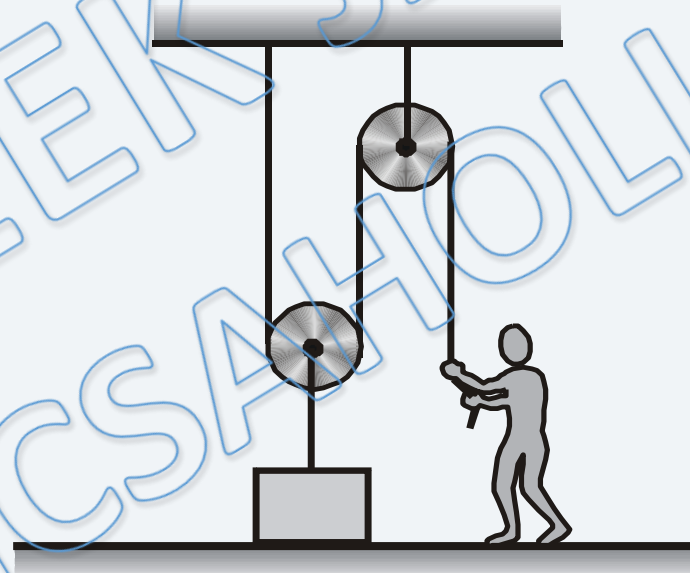
https://youtu.be/5pmwJ_7Wyv0

JEE Main & Advanced, NSEP, INPhO, IPhO

Physics DPP

DPP-1 NLM: Free Body Diagram
By Physicsaholics Team

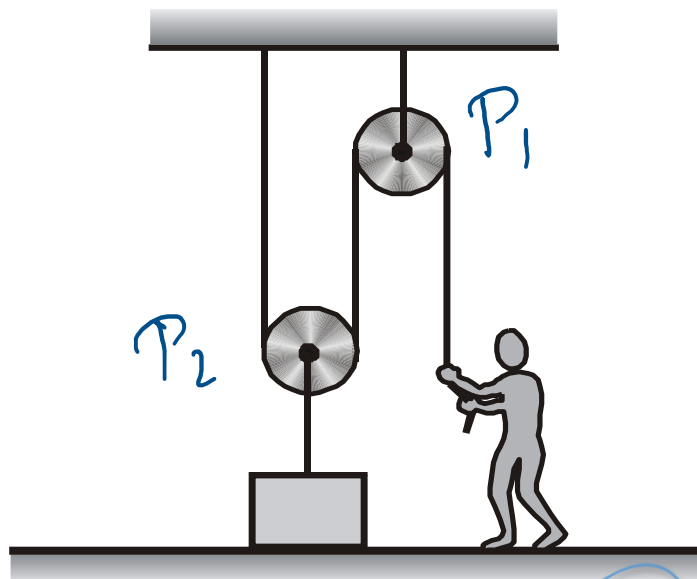
Q) Draw FBD of both pulleys, man and block:
(pulleys are massless)



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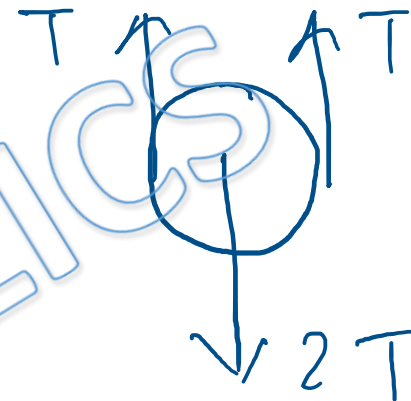
Solution:



F.B.D of P_1



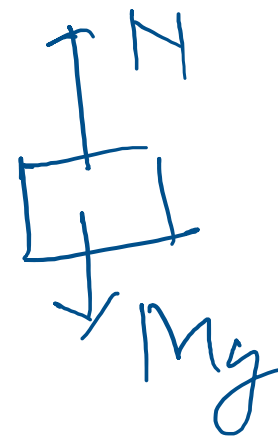
F.B.D of P_2



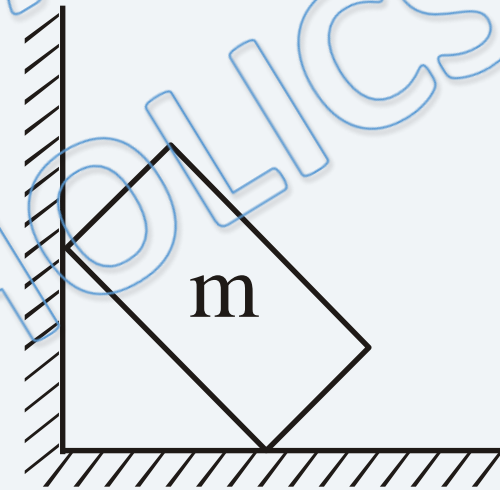
F.B.D of man



F.B.D of block



Q) Draw FBD of block of mass m :

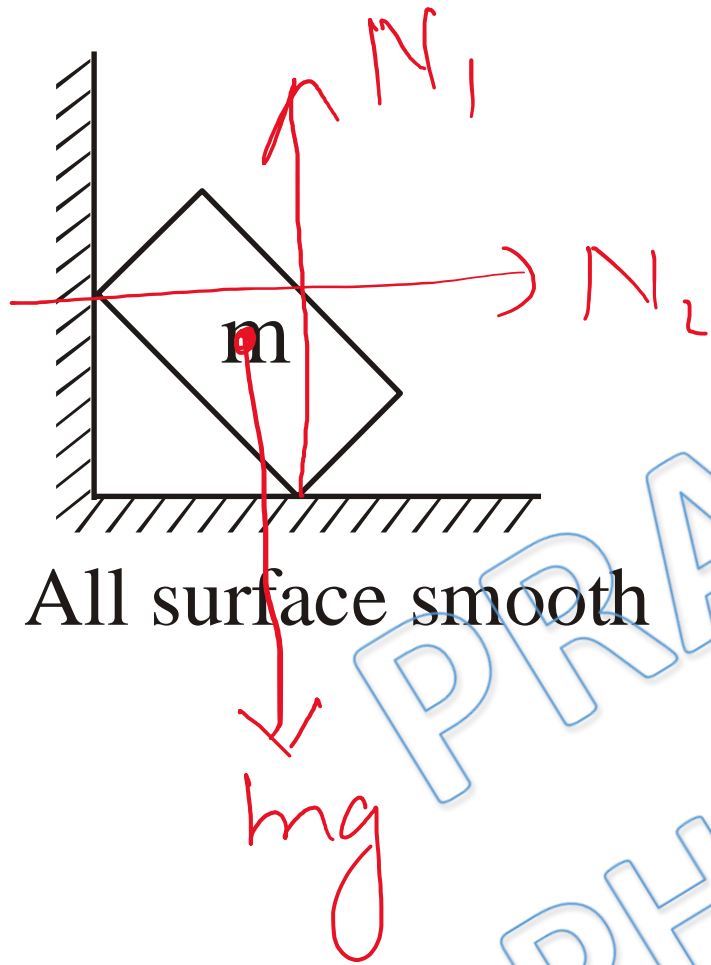


All surface smooth

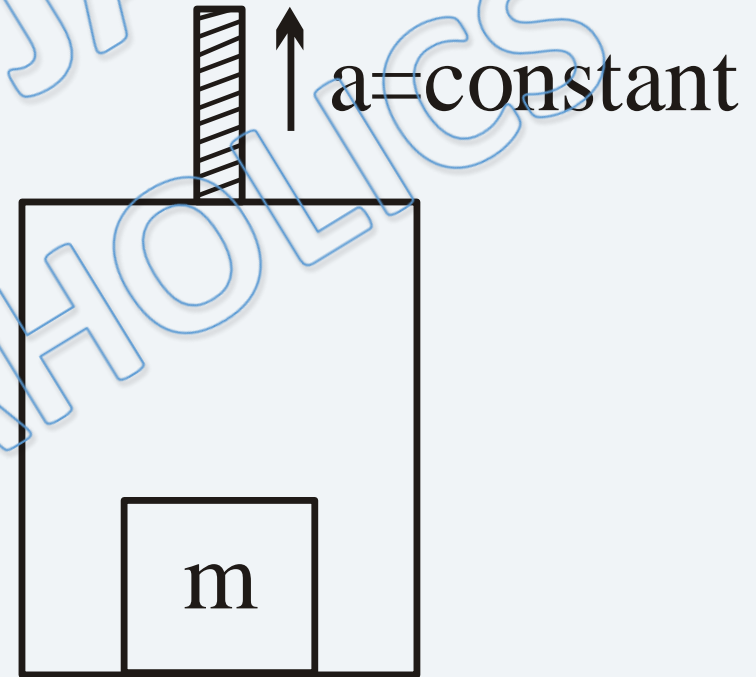
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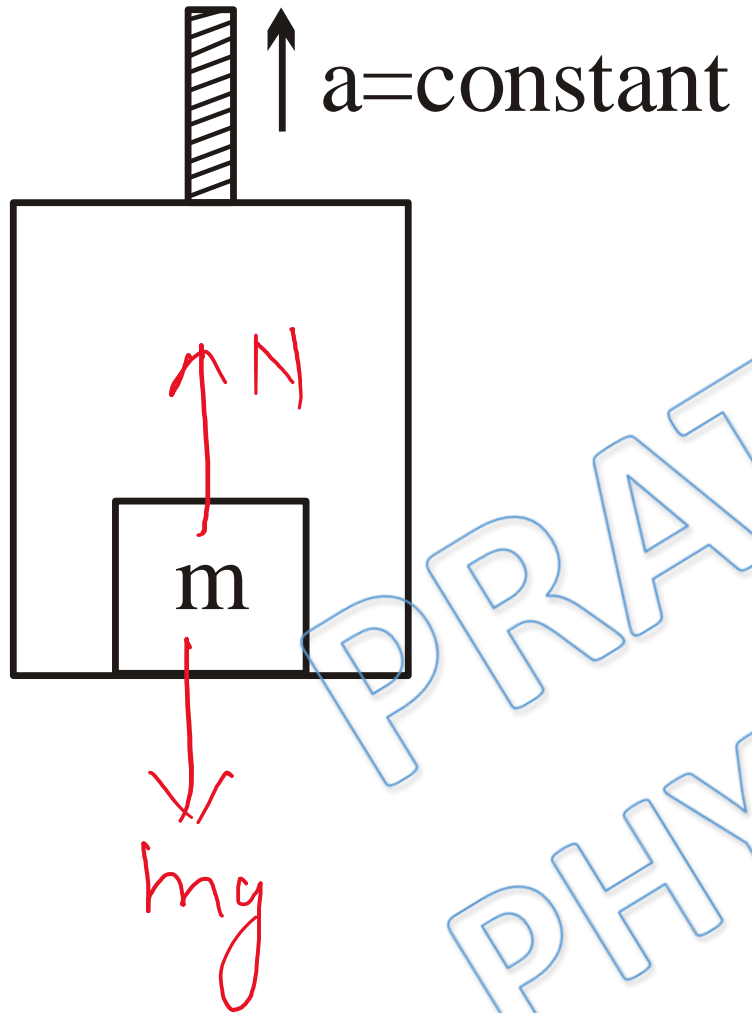
Q) Draw FBD of block of mass m :



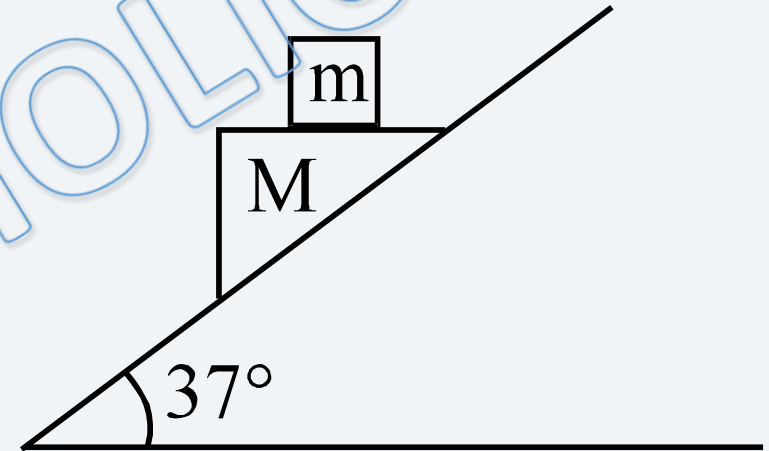
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Solution:



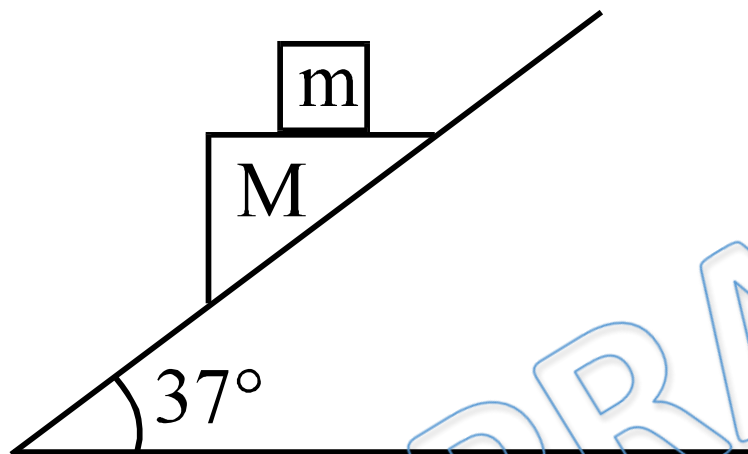
Q) Draw FBD of both the blocks
(all surfaces are smooth)



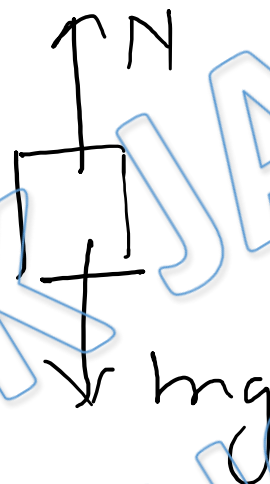
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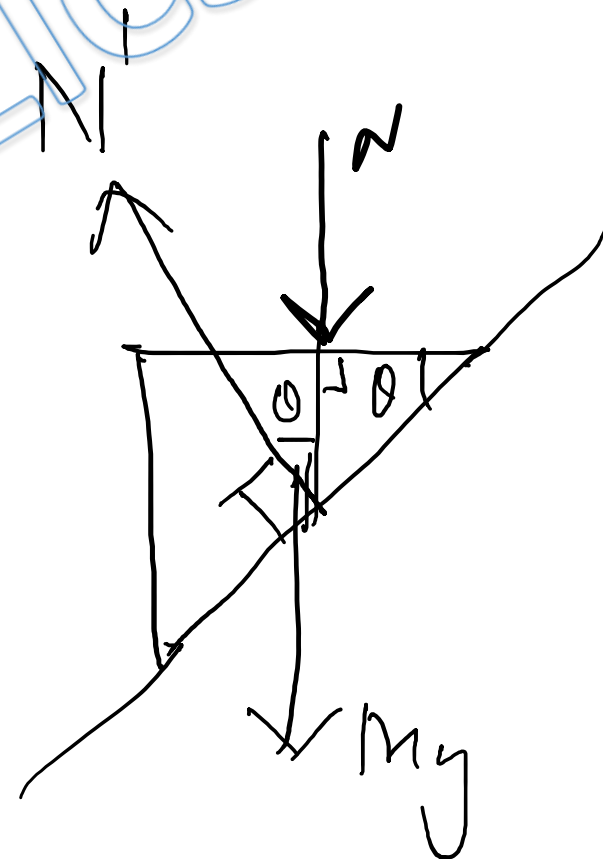
Solution:



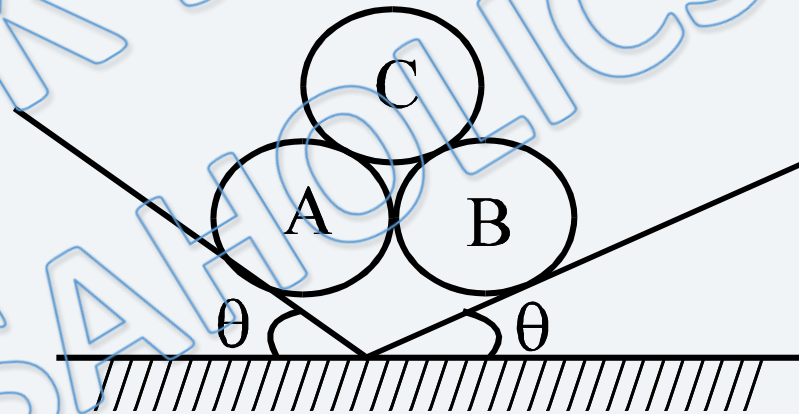
F.B.D of m



F.B.D of M



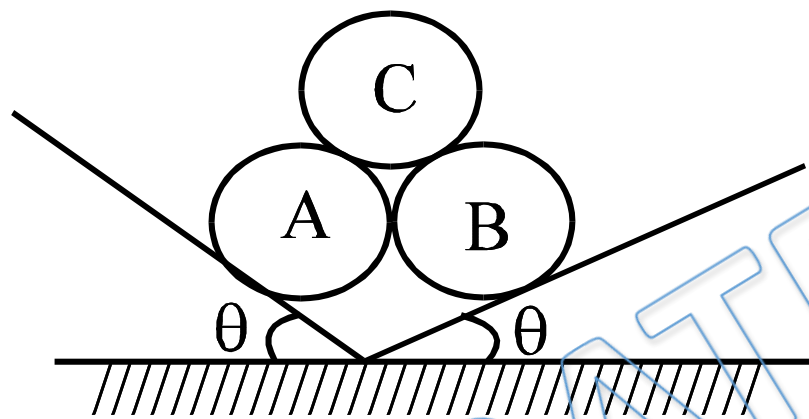
Q) Draw FBD of all spheres:



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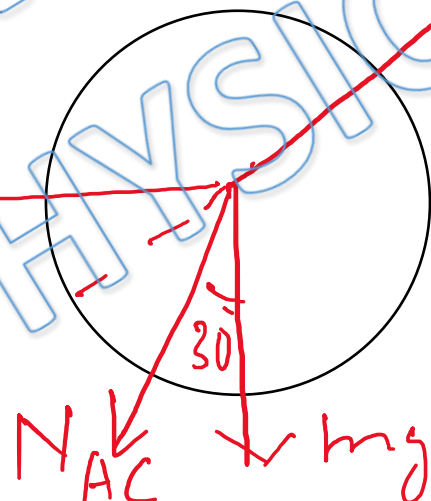
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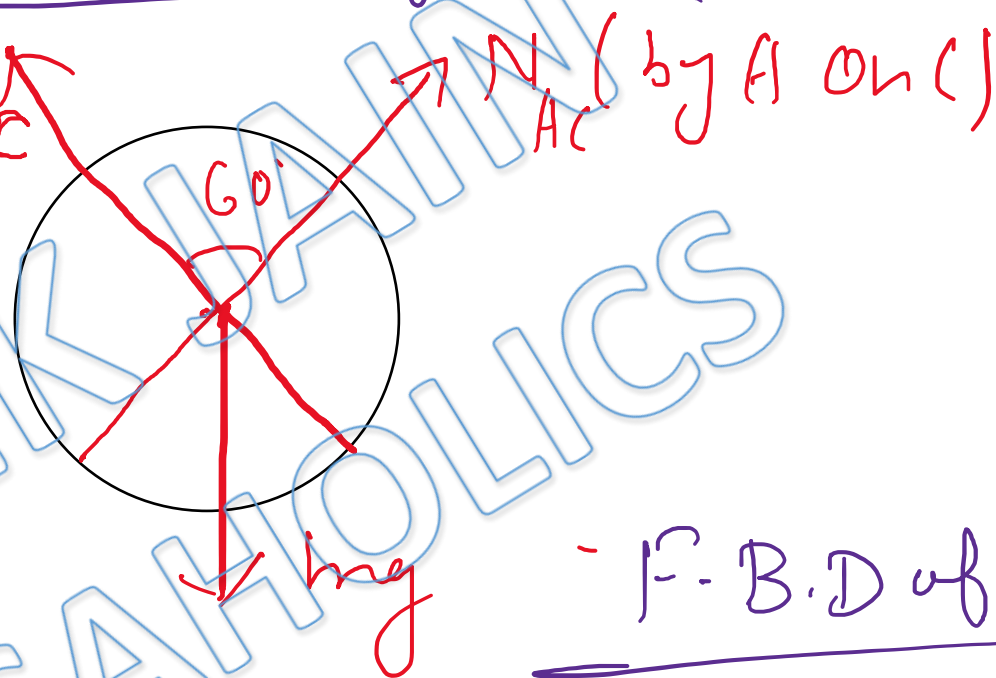
F.B.D of A

N'_{AB}
(by B on A)



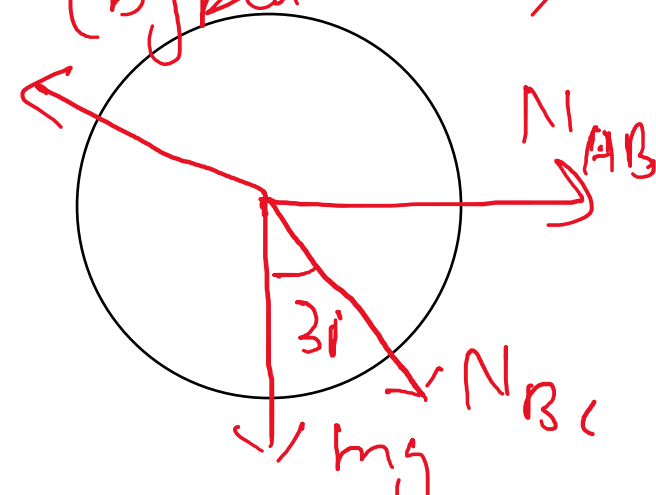
F.B.D of C

N_{BC}
by B on C

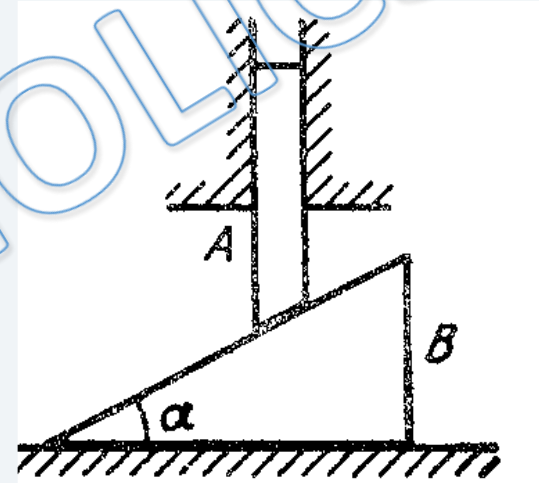


F.B.D of B

N'' (by plane on B)



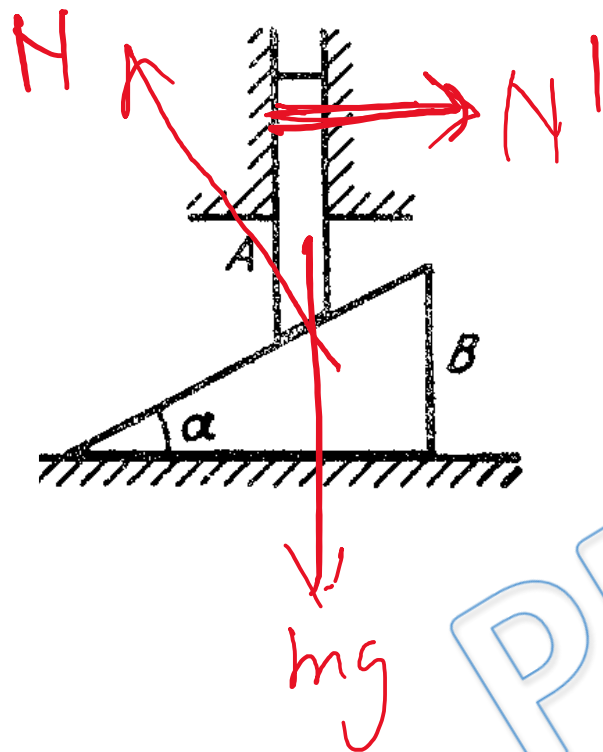
Q) Draw FBD of rod A:



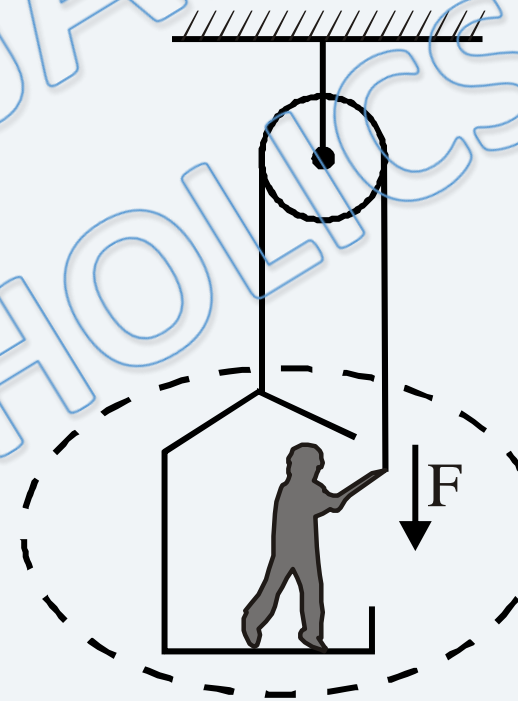
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Solution:



Q) Draw FBD of man and cabin:

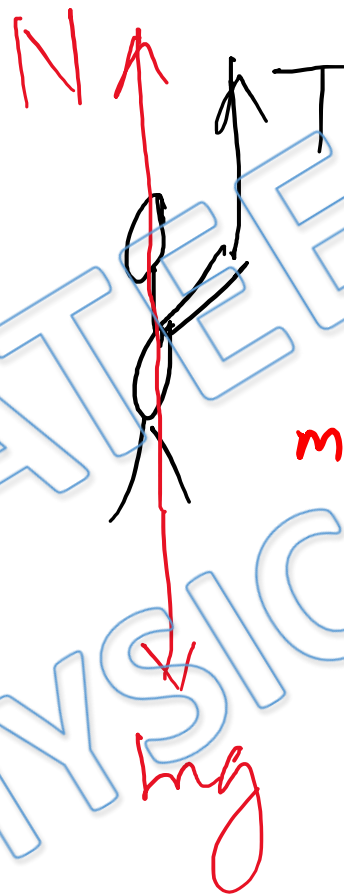
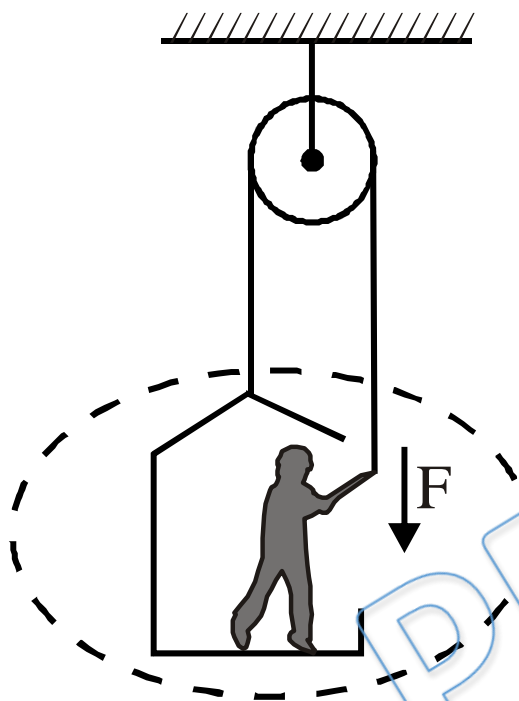


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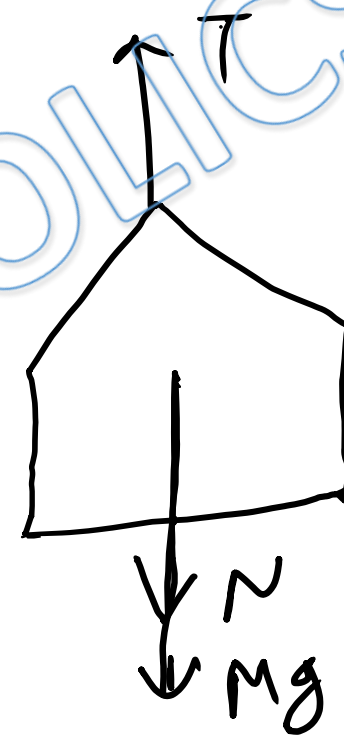
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Solution:

F.B.D of man

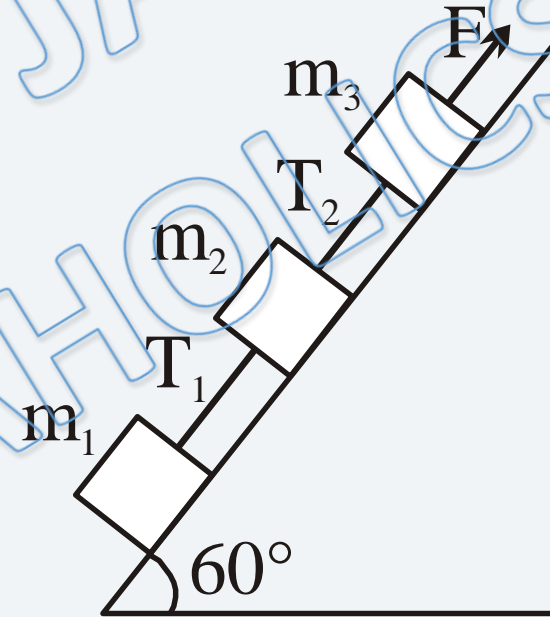


$m = \text{mass of man}$



$M = \text{mass of cabin}$

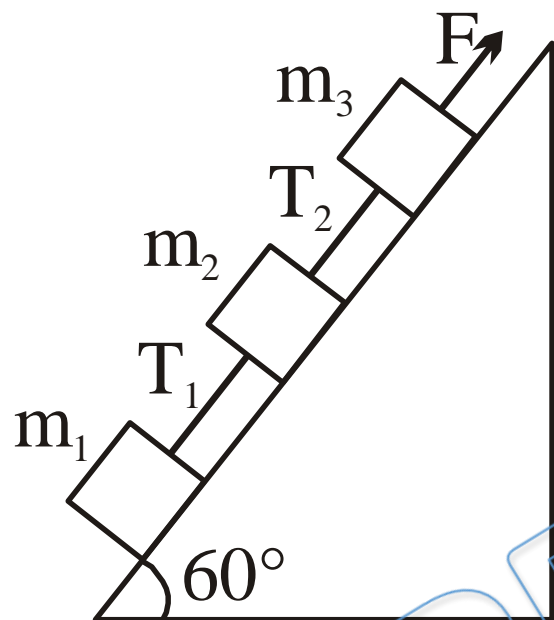
Q) Draw FBD of all three blocks & wedge:



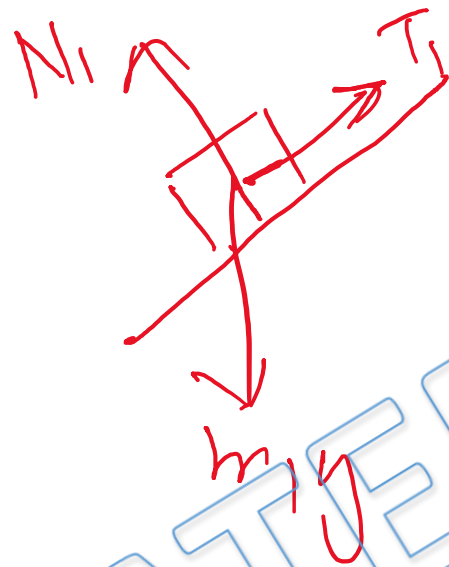
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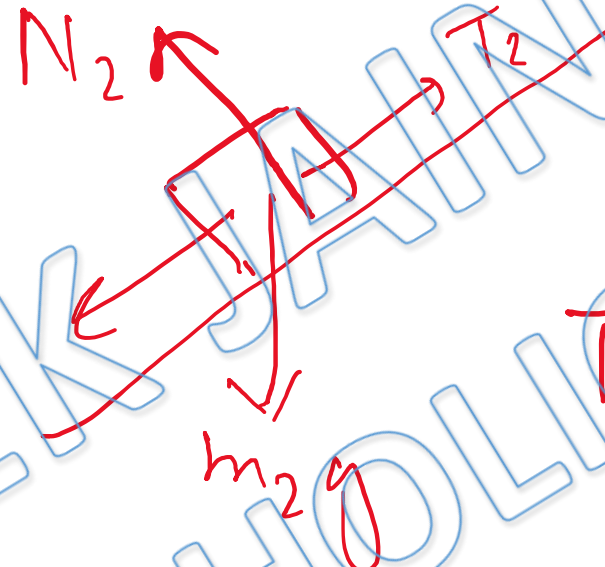
Solution:



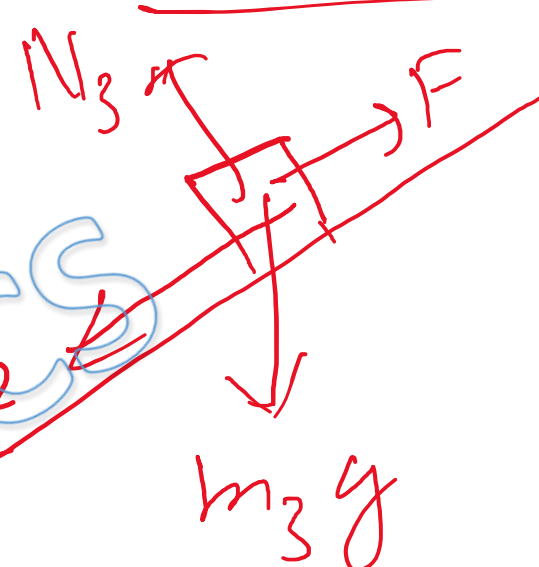
F.B.D of m_1



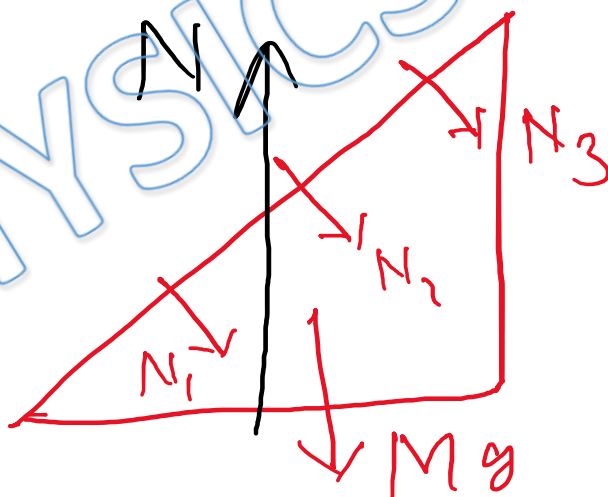
F.B.D of m_2



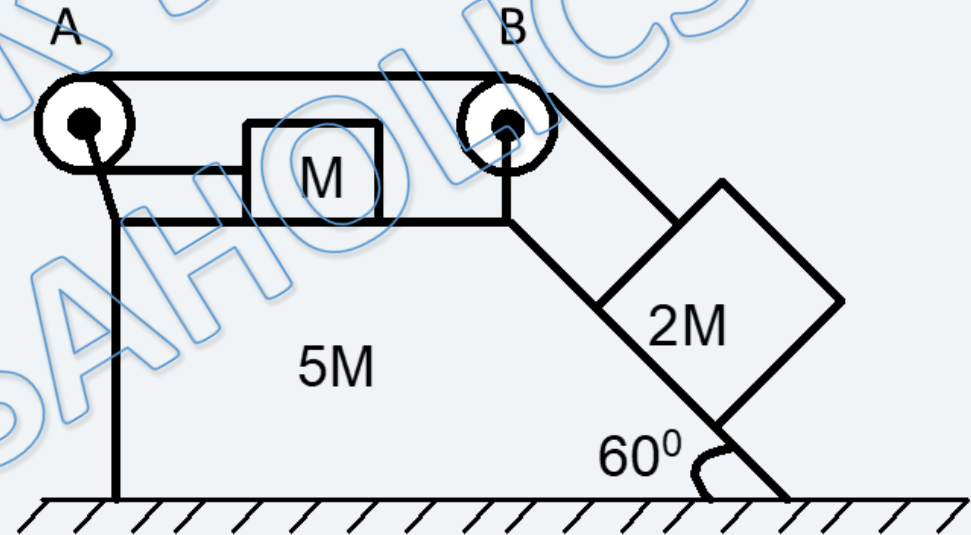
F.B.D of m_3



F.B.D of wedge \rightarrow



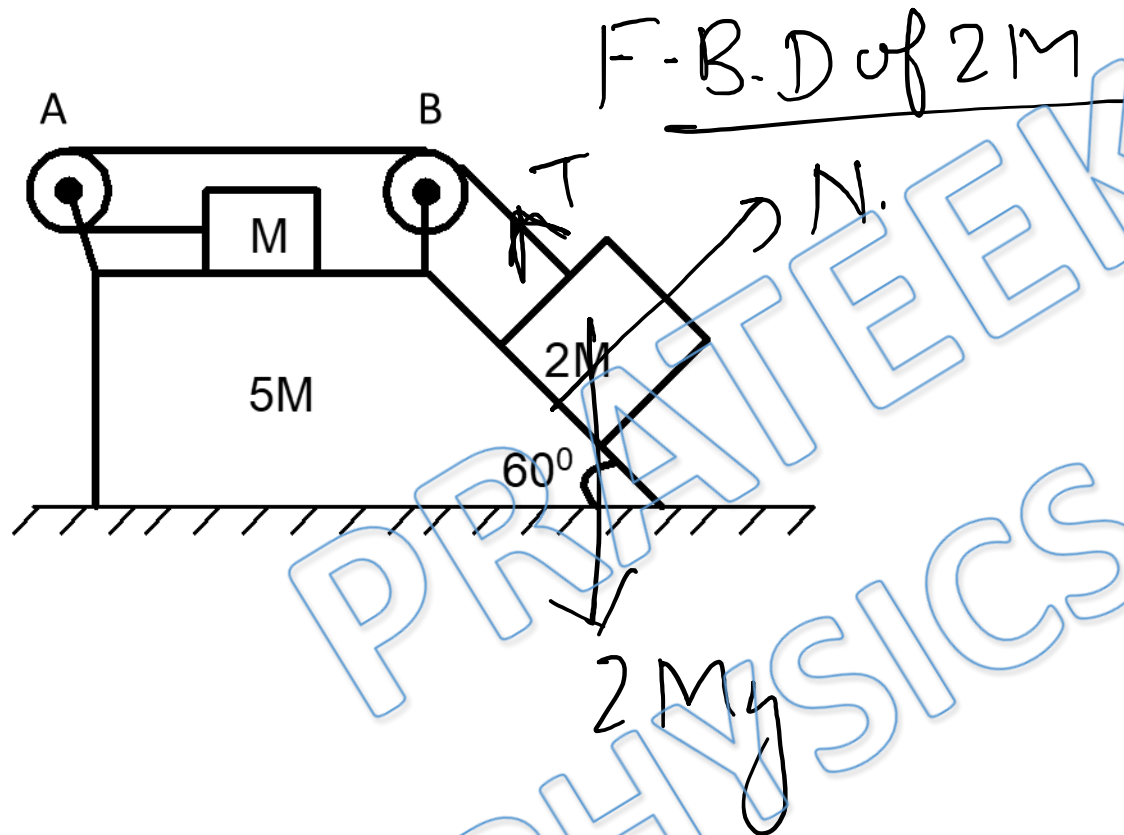
Q) Draw FBD of block of mass $2M$ & Pulley B:



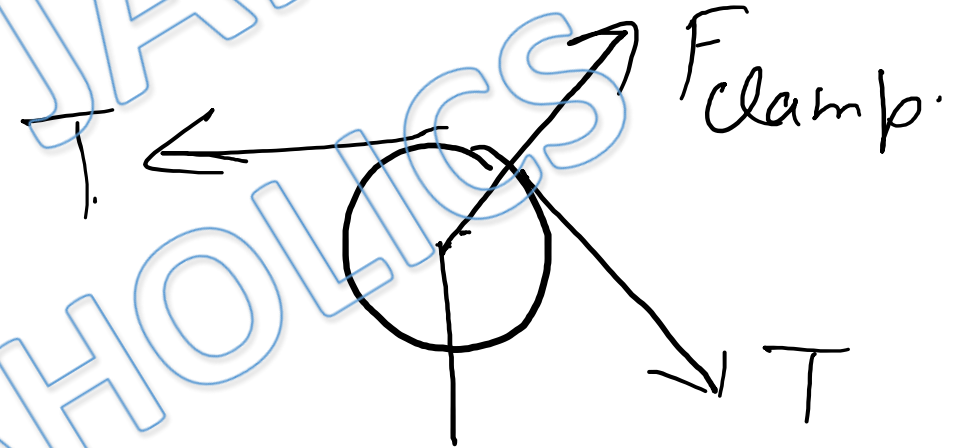
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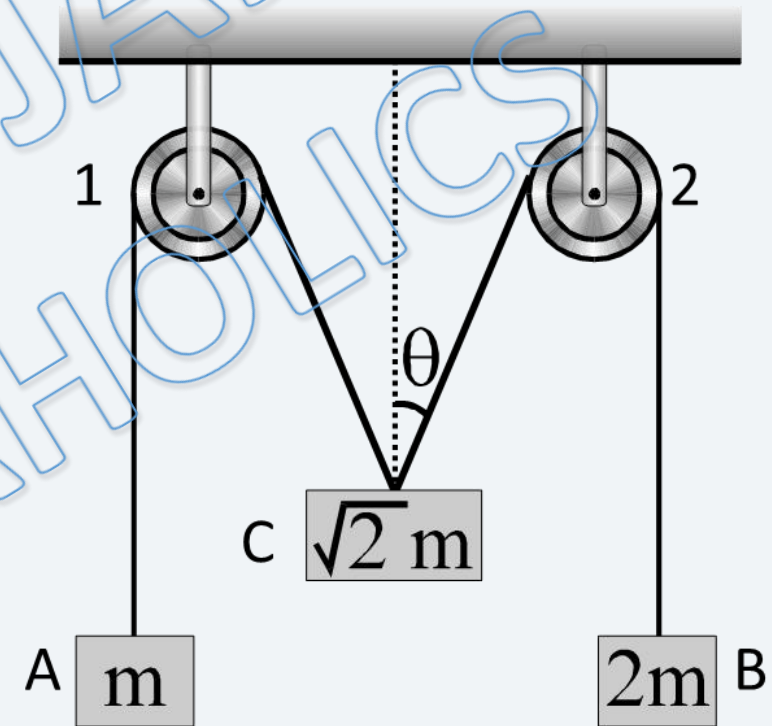
Solution:



F.B.D of Pulley B



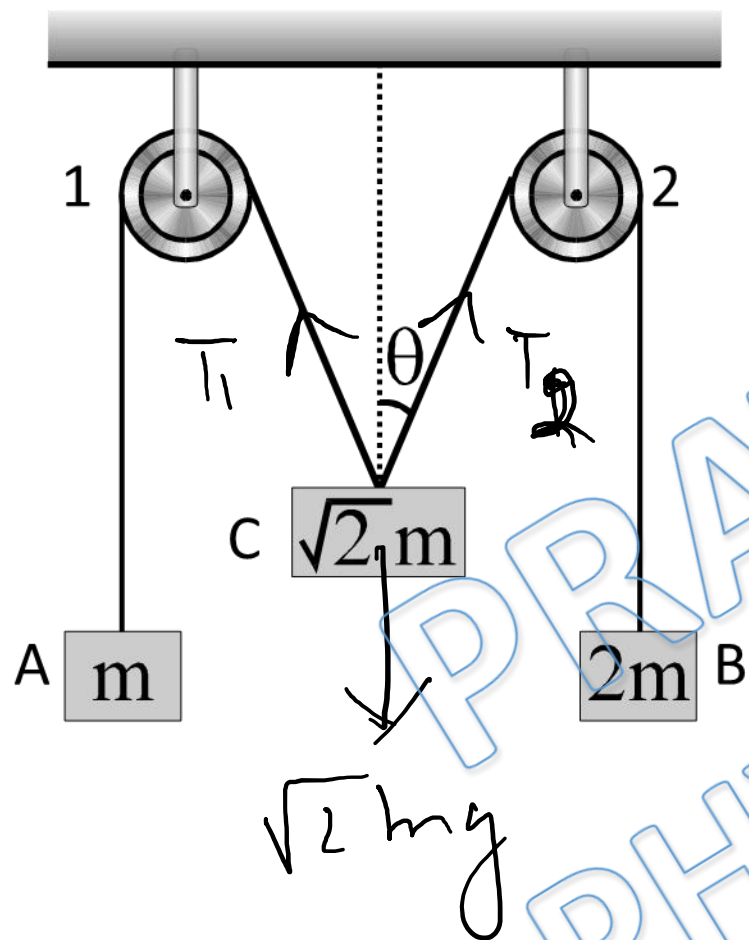
Q) Draw FBD of block C and pulley 2:



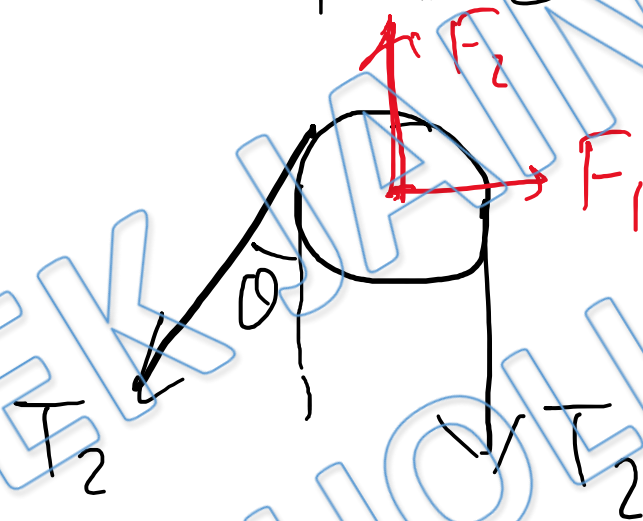
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Solution:



F.B.D of pulley 2



F_1 & F_2
are forces
by clamp
on pulley

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Chalo Niklo