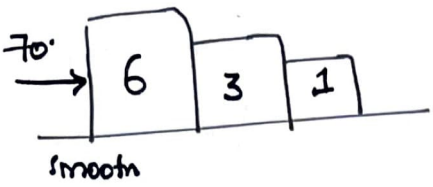
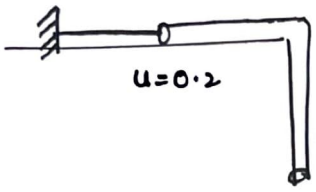
ASSIGNMENT - (5-5:15).

1.



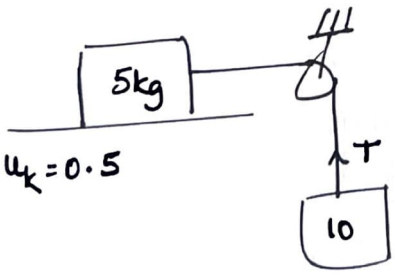
find (i) acceleration of blocks
(ii) Normal between 6 & 3kg.
(iii) Normal between 3 & 1kg.

2.



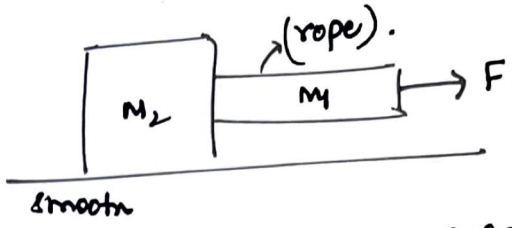
$\frac{2}{3}$rd of a rope is hanging from the table as shown. If the string is cut find the acceleration.

3.



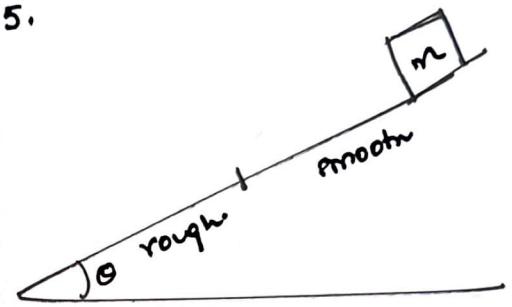
Find T

4.



find force exerted by the rope on the block.

5.



A block of mass 'm' slides down the incline plane which is half smooth & half rough such a way that the block stops at the end of the inclination. Find μ_k of rough surface.

CONSTRAINT RELATION

$\Sigma \vec{T} \cdot \vec{s} = 0$
$\Sigma \vec{T} \cdot \vec{v} = 0$ → for a given pulley system.

$\Sigma \vec{T} \cdot \vec{a} = 0$ → when angle between T & a does not change.
or $v = 0$ (begins to move).

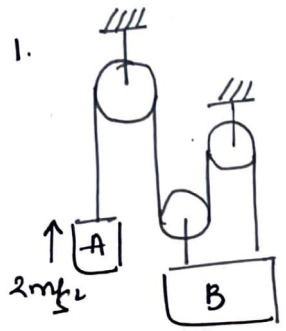
× ×

T ↑ $\vec{T} \cdot \vec{a} = -T \cdot a$
↓ a

T ↑ $\vec{T} \cdot \vec{a} = T \cdot a$
↑ a

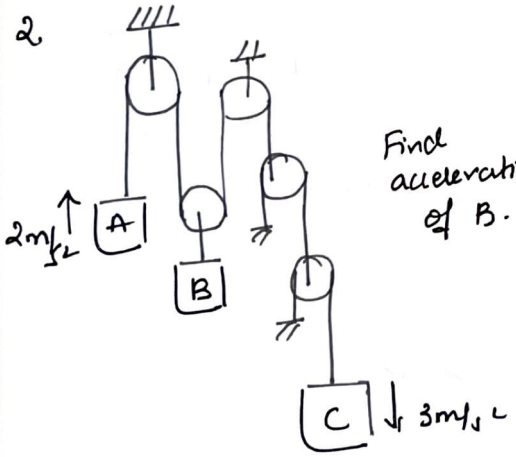
× × ×

1.



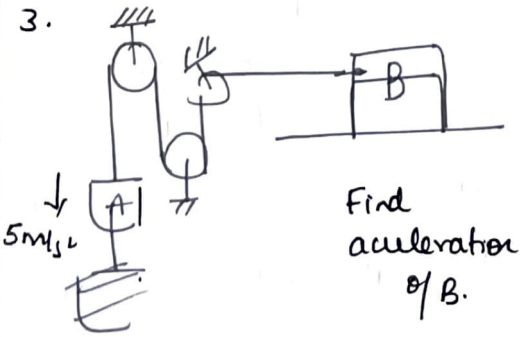
Find acceleration of B.

2.



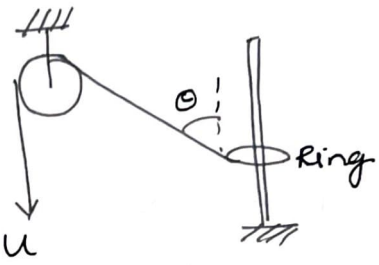
Find acceleration of B.

3.



Find acceleration of B.

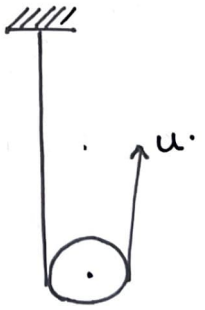
4.



Find velocity of ring when
(i) $\theta = 37°$ (ii) $\theta = 90°$

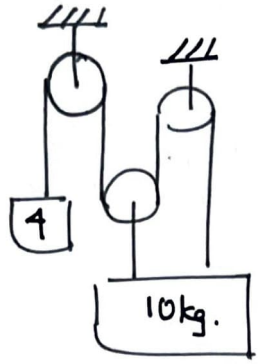
Can we use the same method to calculate acceleration?

5.



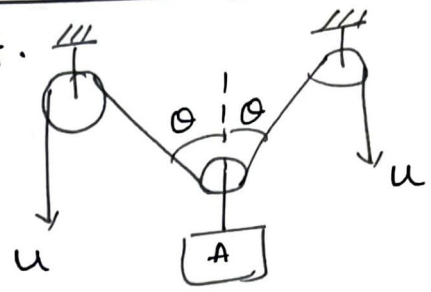
Find velocity of the pulley.

6.



Find acceleration.

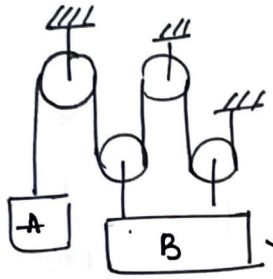
4.



Find velocity of A.

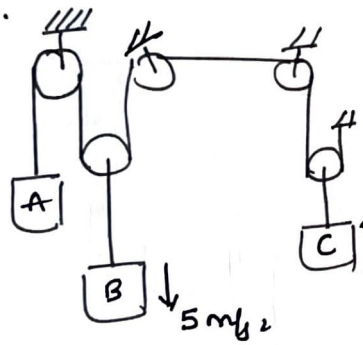
Homework:

1.



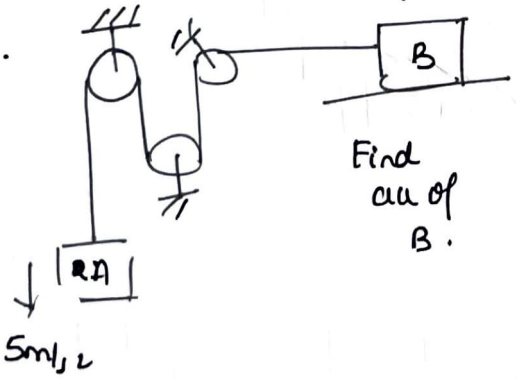
Find acc of A

2.



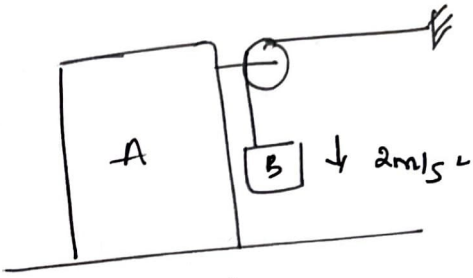
Find acc of A.

3.



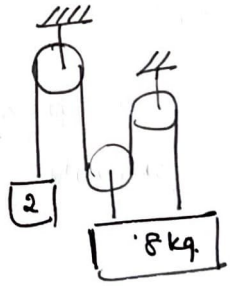
Find acc of B.

5.



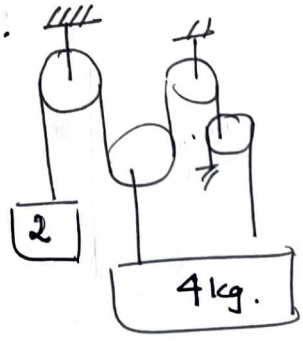
Find acc. of A.

6.



Find accelerations.

7.



Find accelerations.

8. Does mass effect the accelerations in constraint relation equations ??