Panel 1

ES204 Mechanical Systems

More GPM Kinetics
Lecture 24

Dr. Fisher

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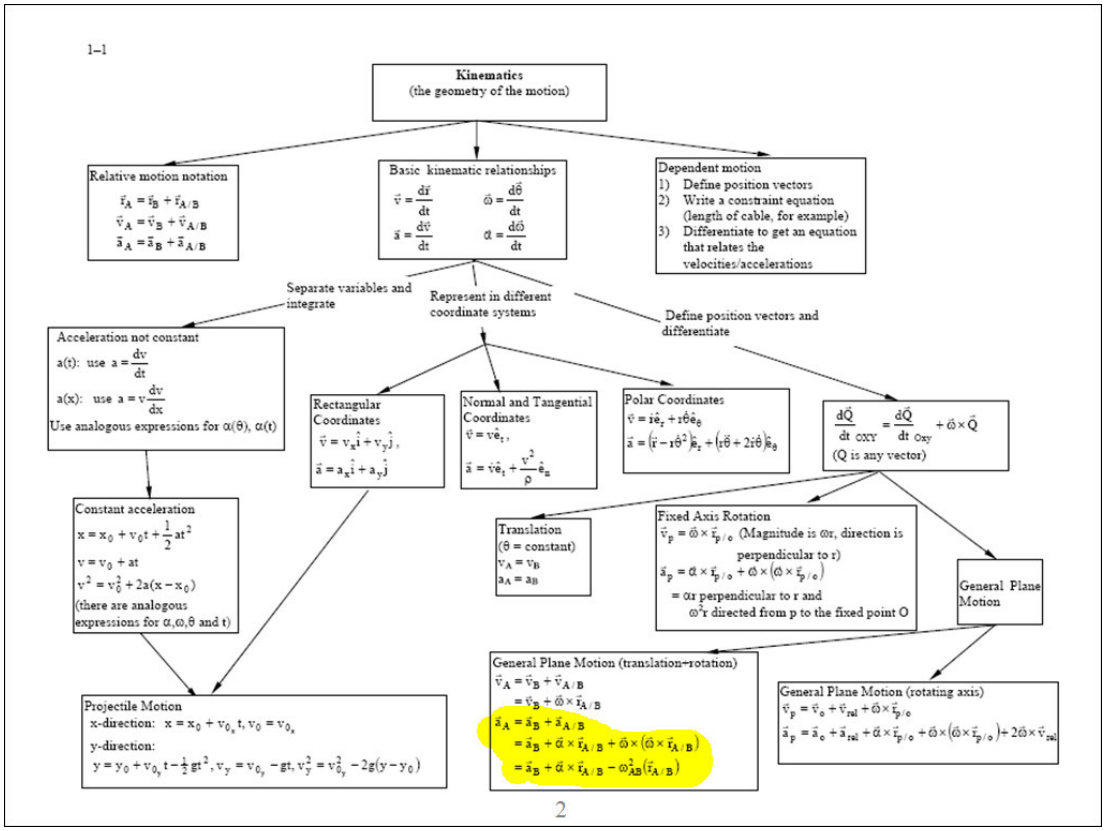
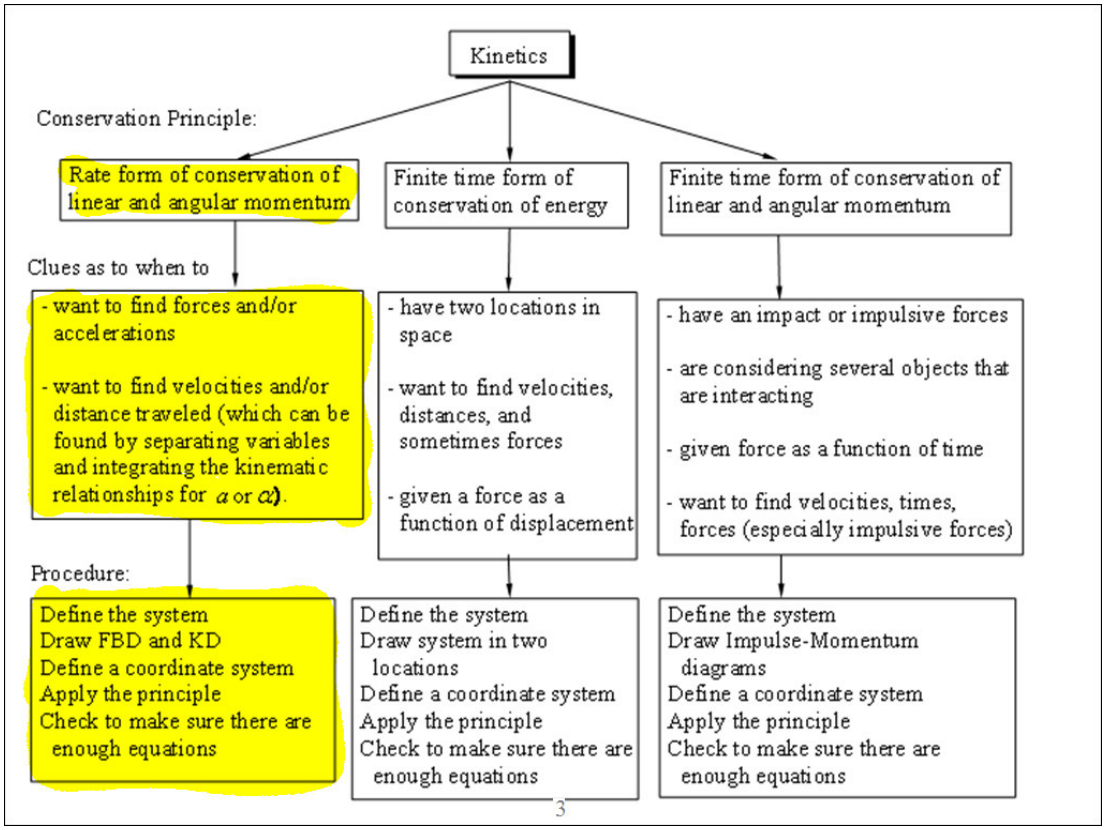
Panel 2

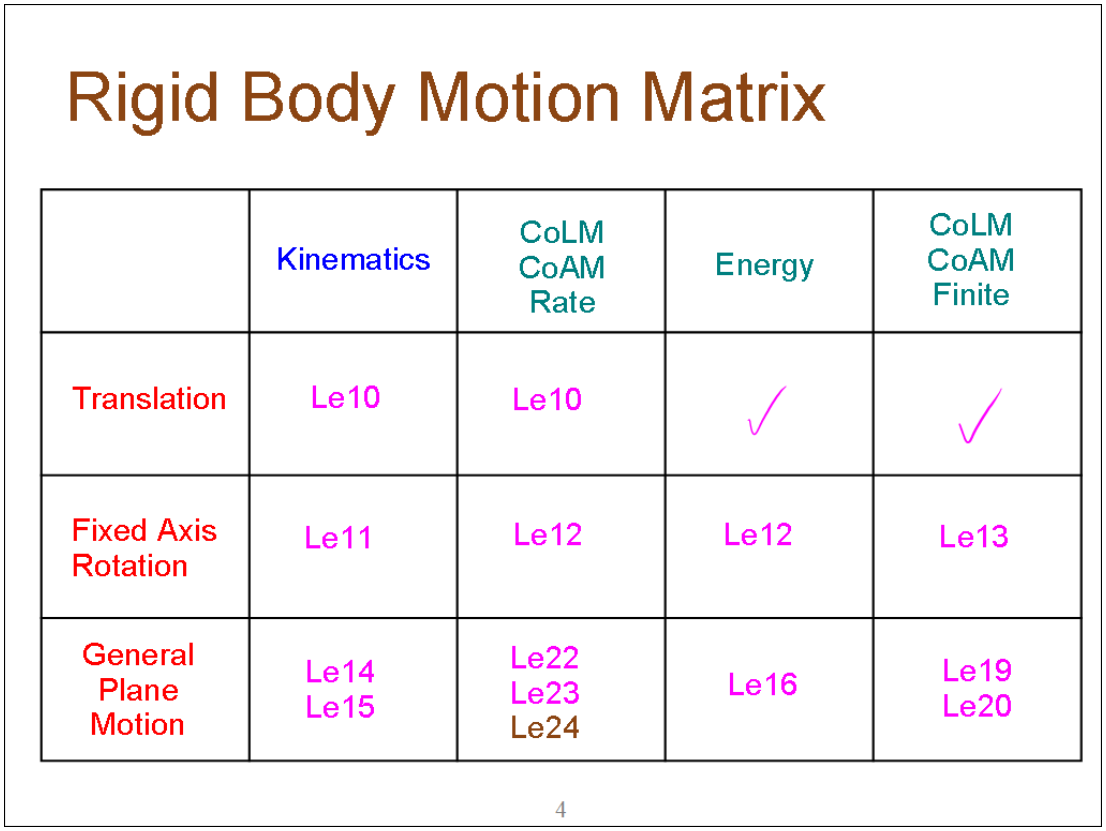


2

Panel 3

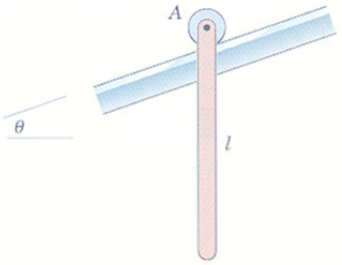


Panel 4



Panel 5

The slender rod of mass m and length l is released from rest in the vertical position with the small, i.e. negligible, roller at end A resting on the incline. Determine the initial acceleration of A. (*taken from Dynamics, 4th Edition by Meriam & Kraige*)



Assume as knowns:
L = Length of the rod
m = mass of the rod
θ = Angle of the ramp

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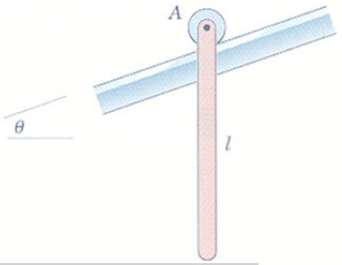
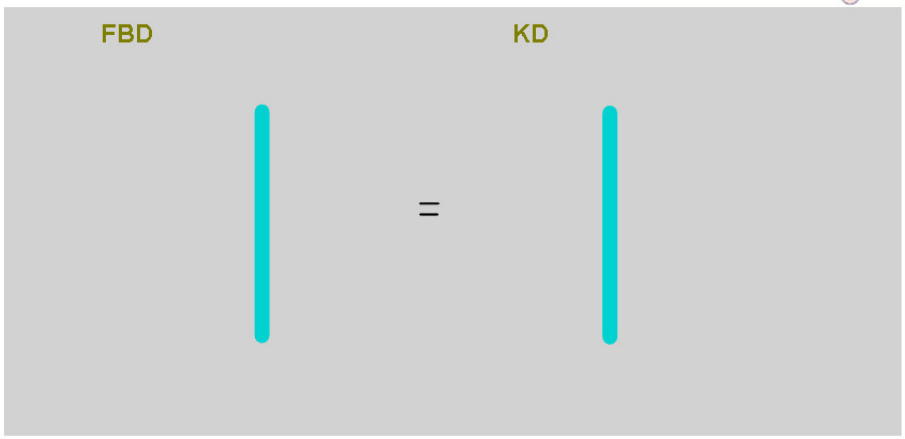
Panel 6

The slender rod of mass m and length l is released from rest in the vertical position with the small, i.e. negligible, roller at end A resting on the incline. Determine the initial acceleration of A. (*taken from Dynamics, 4th Edition by Meriam & Kraige*)





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Panel 7

FBD KD

=

Make this page happier

It likes correct work...

CoLM Rate y

CoLM Rate x

CoAM Rate about pt ____

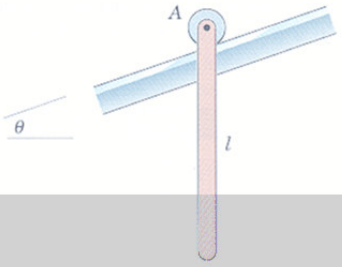
Eq	Unk

Next we'll...

7

Panel 8

The slender rod of mass m and length l is released from rest in the vertical position with the small, i.e. negligible, roller at end A resting on the incline. Determine the initial acceleration of A. (*taken from Dynamics, 4th Edition by Meriam & Kraige*)



Hit me with some Kinematics then

Get to the scalar equation(s) you need.

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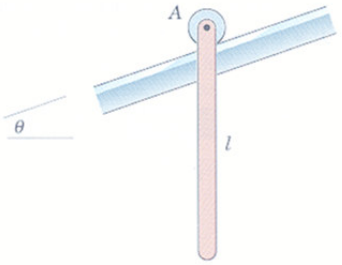
Panel 9

The slender rod of mass m and length l is released from rest in the vertical position with the small, i.e. negligible, roller at end A resting on the incline. Determine the initial acceleration of A. (*taken from Dynamics, 4th Edition by Meriam & Kraige*)



CoLM Rate y

CoLM Rate x

CoAM Rate about cg

Kinematics

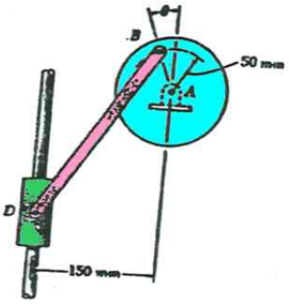
Eq	Unk

9

Panel 10

The disk shown has a constant angular velocity of 500 rpm CCW. The rod BD is 250mm long and has a mass of 3 kg and friction can be neglected. The collar at D has a mass of 1 kg.

Setup FBDs and KDs so that you could find forces at B and D



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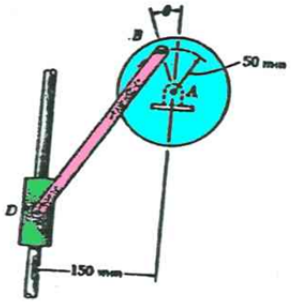
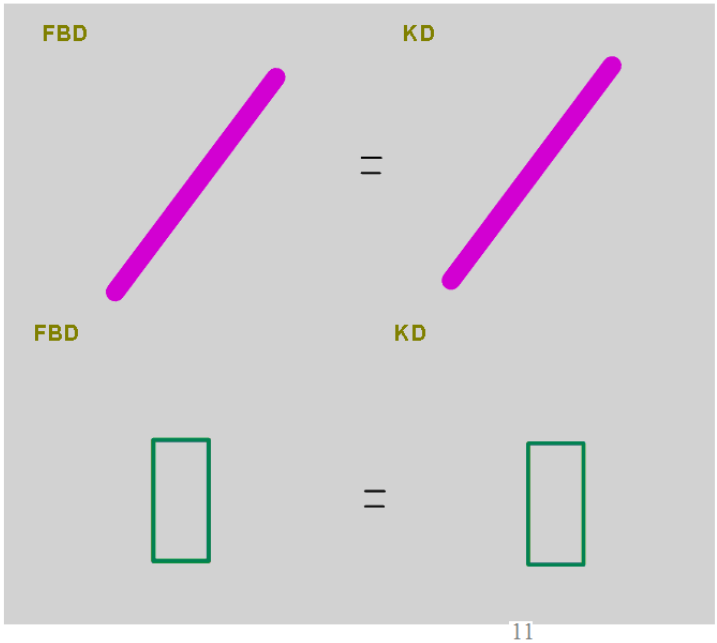
Panel 11

The disk shown has a constant angular velocity of 500 rpm CCW. The rod BD is 250mm long and has a mass of 3 kg and friction can be neglected. The collar at D has a mass of 1 kg.





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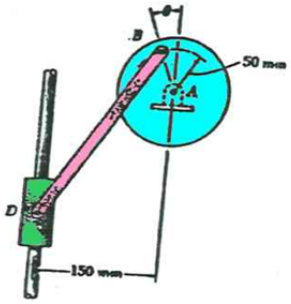
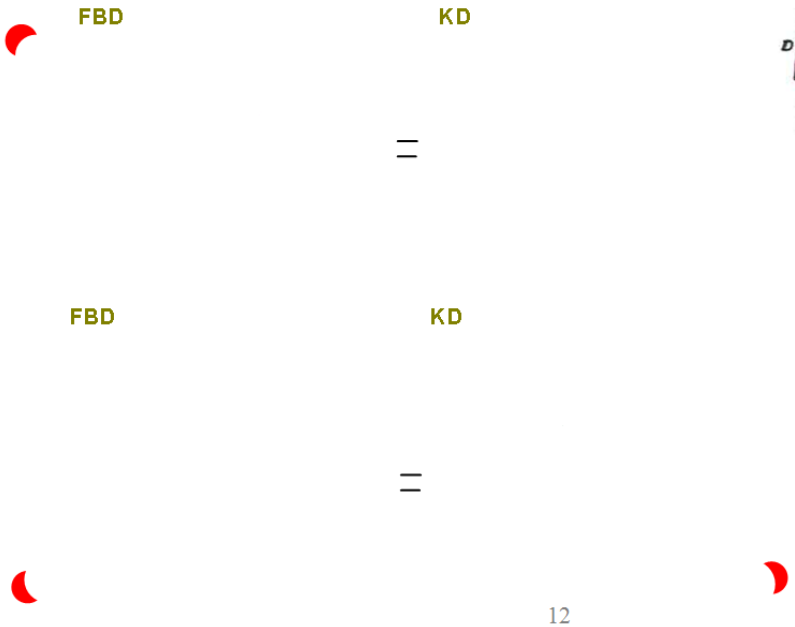
Panel 12

The disk shown has a constant angular velocity of 500 rpm CCW. The rod BD is 250mm long and has a mass of 3 kg and friction can be neglected. The collar at D has a mass of 1 kg.





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