ENSC 2113
Engineering Mechanics: Statics

Lecture 23
Section 6.6

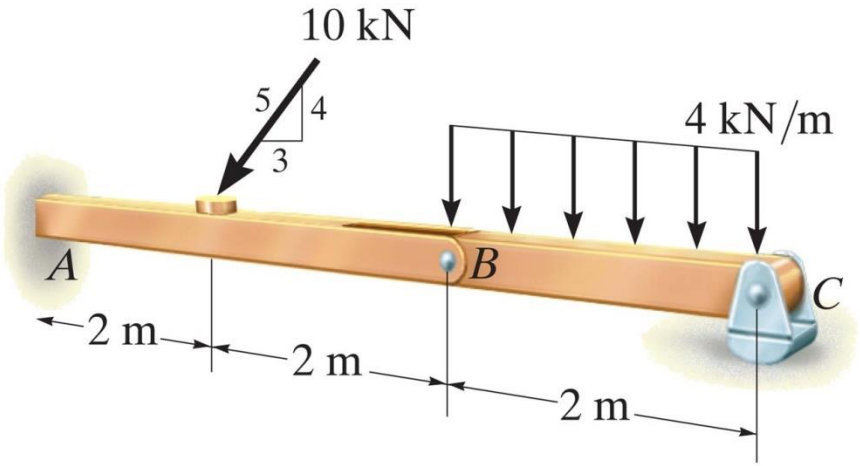
College of Engineering, Architecture & Technology

6.6: Frames and Machines

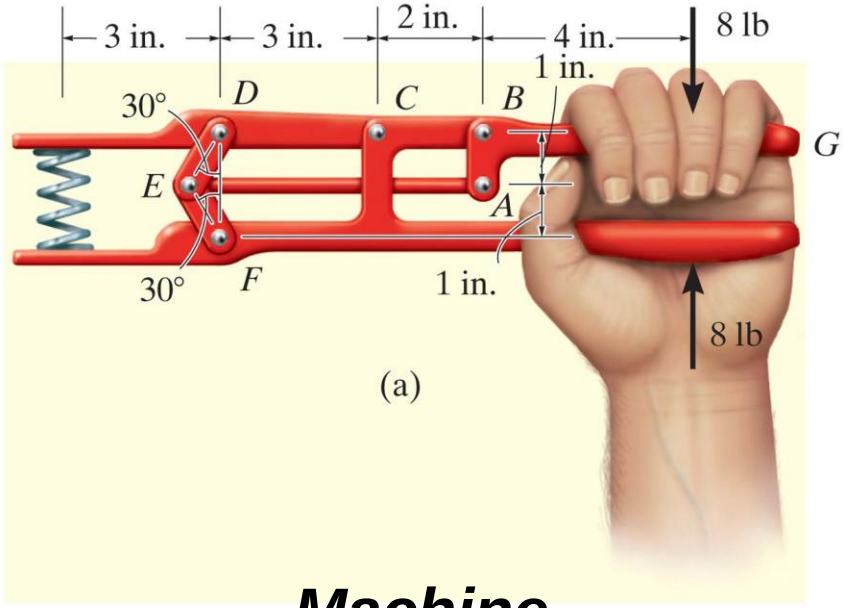
Frames and ***Machines*** are composed of pin-connected, multi-force members.

Frames are typically stationary ...

Machines typically contain moving parts and transmit or alter the effects of forces and moments ...



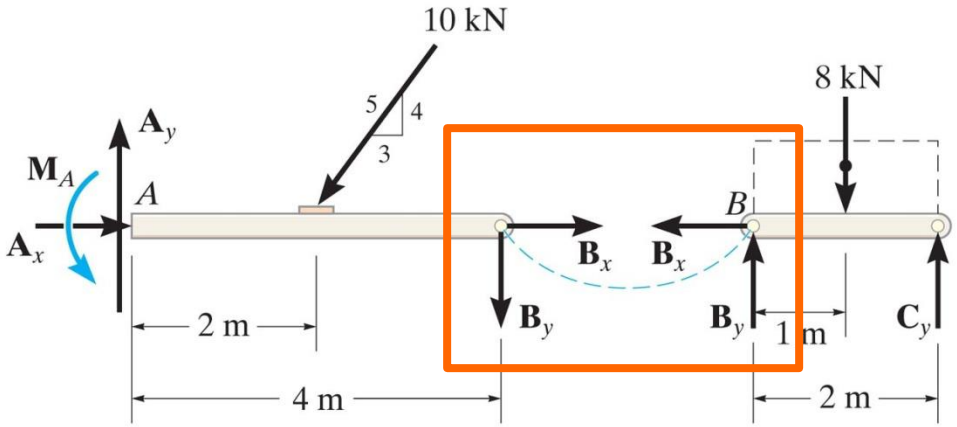
Frame

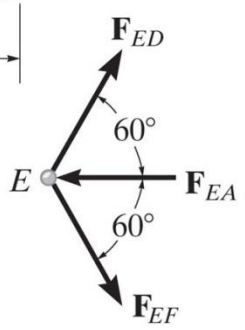


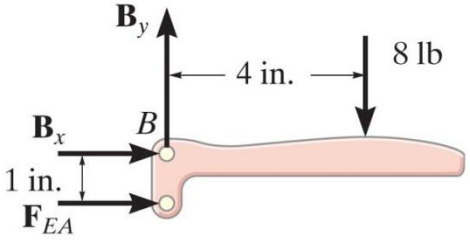
Machine

For a coplanar system, remember that we only have 3 equilibrium eqns to use ...

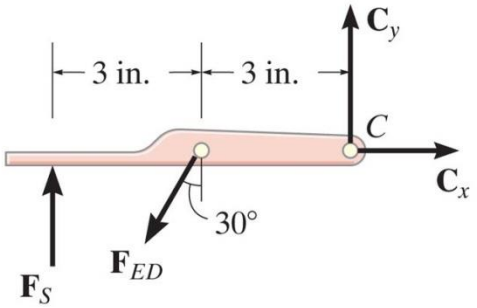
For ***Frames*** & ***Machines***, this often requires that we break the system into individual mbrs ...





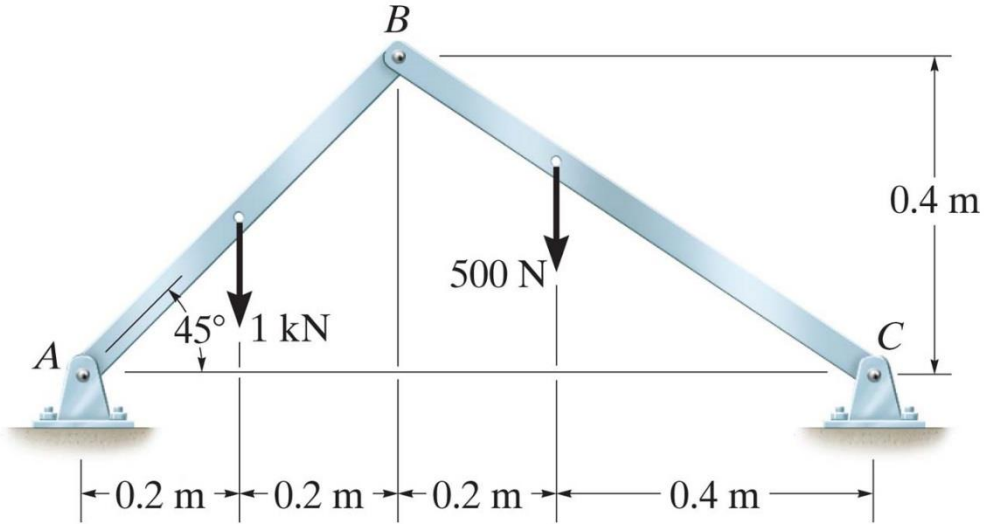


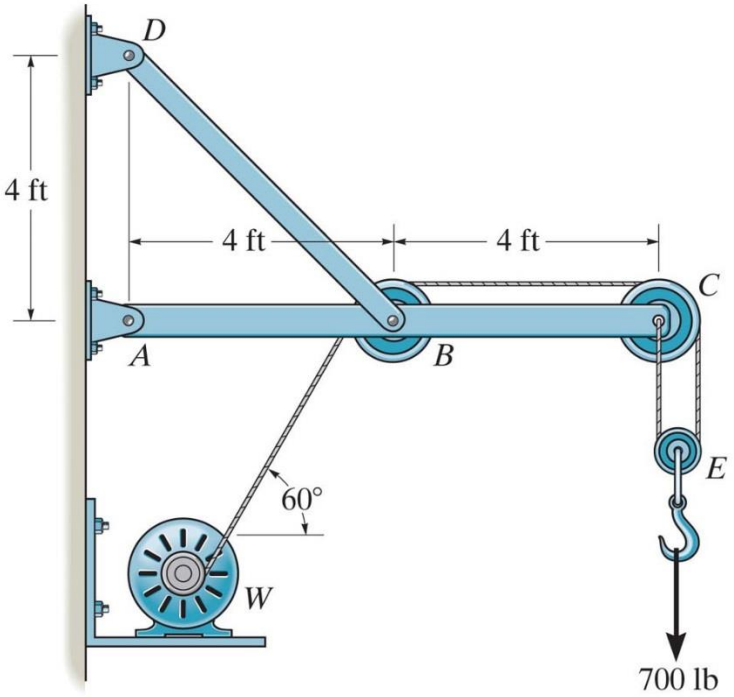
Internal forces at joints become equal magnitude acting in opposite directions ...



Procedures for Analysis:

1) Draw **FBD** for frame or machine.
2) Identify all 2-force members.
3) Forces at connecting joints btwn mbrs will have equal & opposite forces applied to each mbr of the joint.
4) Apply equilibrium eqns to solve for unknown values.





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