Announcements

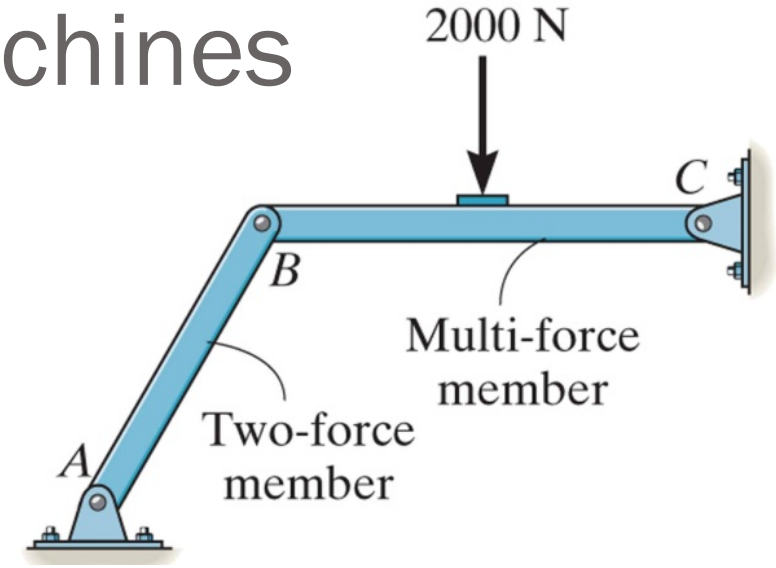
- CBTF Quiz 4 next week (10/17-20)
- Do HW14 on Prairie Learn to prepare for Quiz 4
- Have you checked your grades on Compass yet?

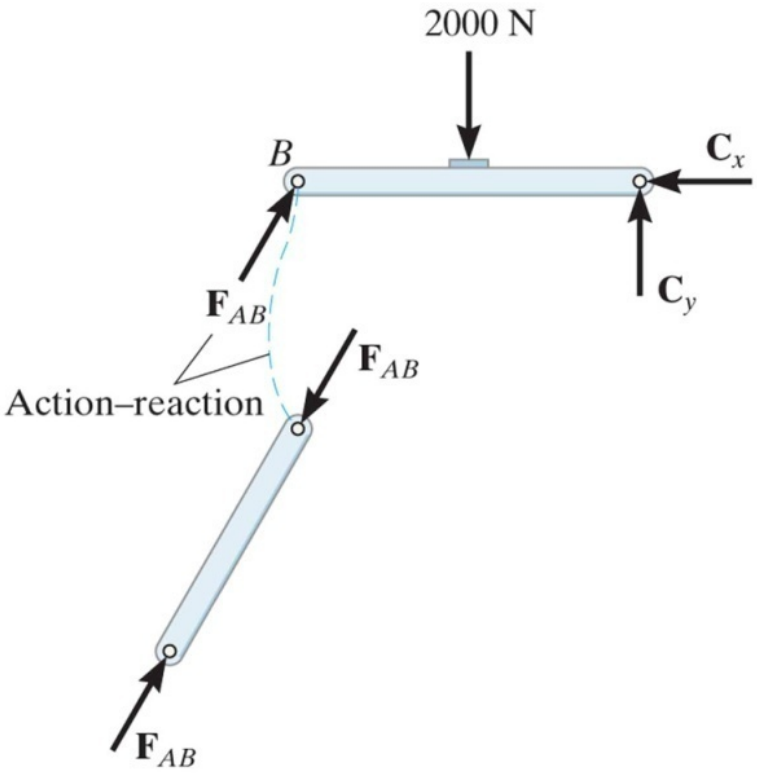
❑ Upcoming deadlines:

- Friday (10/13) – TODAY!
  - WA #2
- Wednesday (10/18)
  - PL HW14

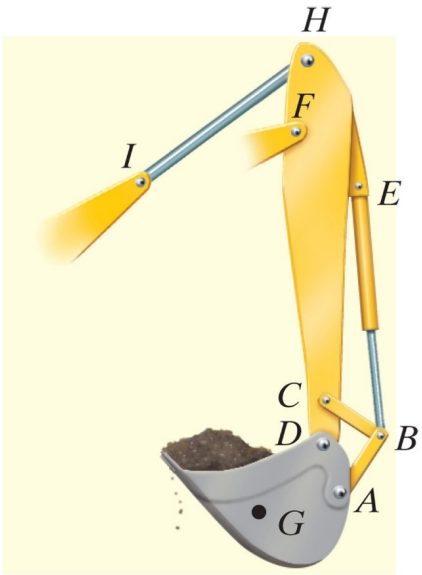
Recap: Frames and machines

The members can be truss elements, beams, pulleys, cables, and other components. The general solution method is similar to rigid body at equilibrium analysis:





Recap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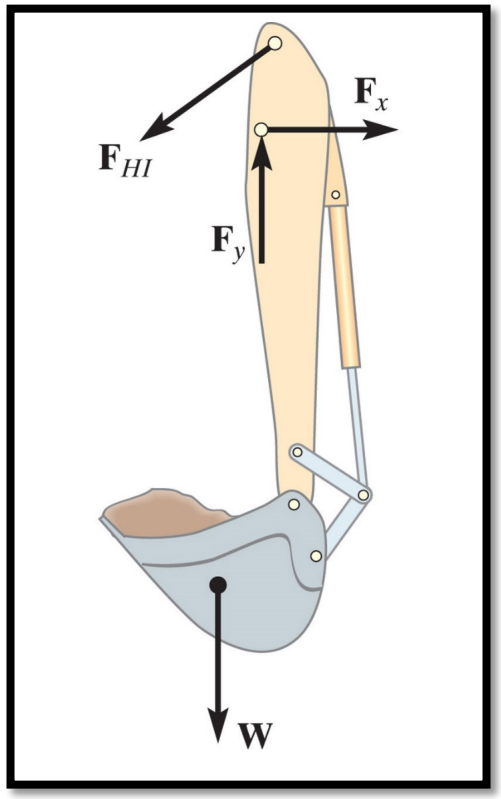
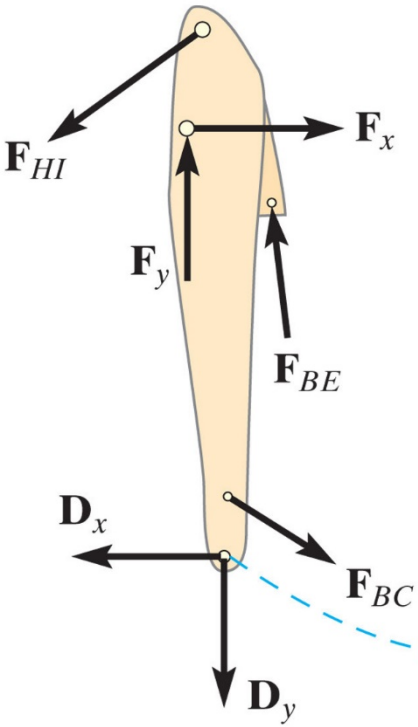

$\mathbf{F}_x$
$\mathbf{F}_{HI}$
$\mathbf{F}_y$
$\mathbf{W}$


$\mathbf{F}_{HI}$
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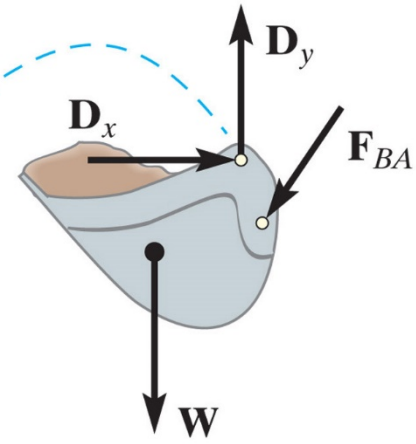
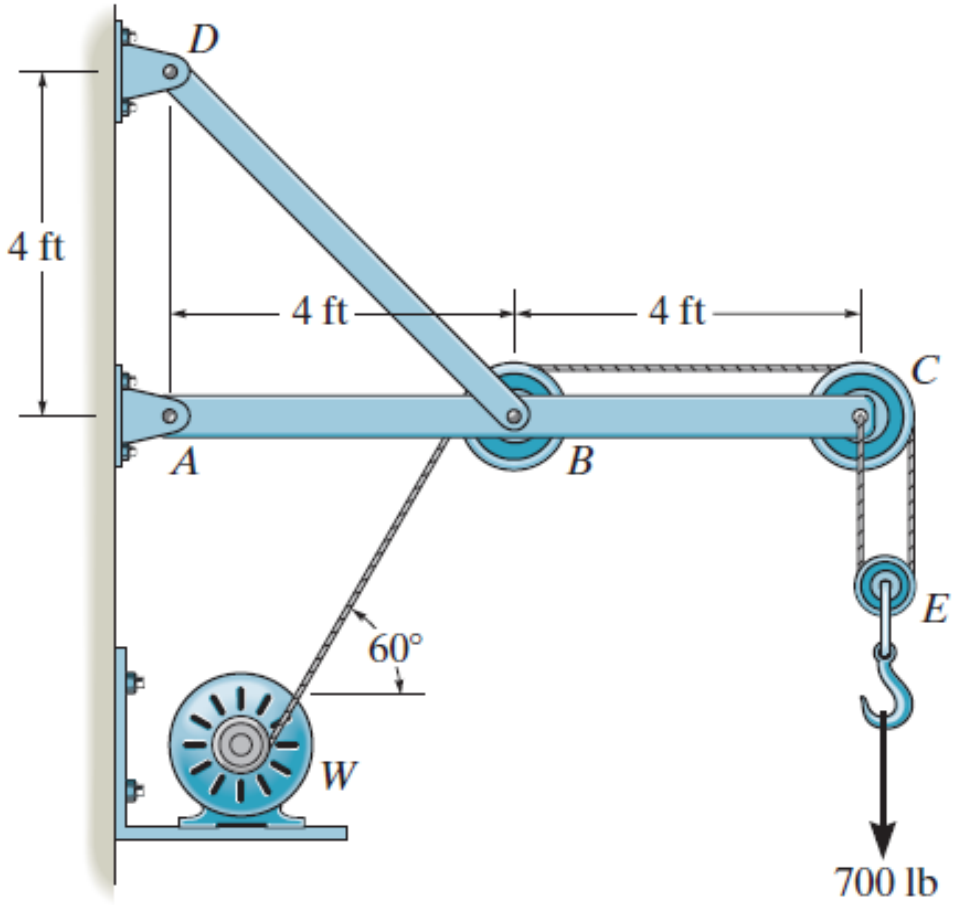
$\mathbf{F}_y$
$\mathbf{F}_{BE}$
$\mathbf{D}_x$
$\mathbf{F}_{BC}$
$\mathbf{D}_y$

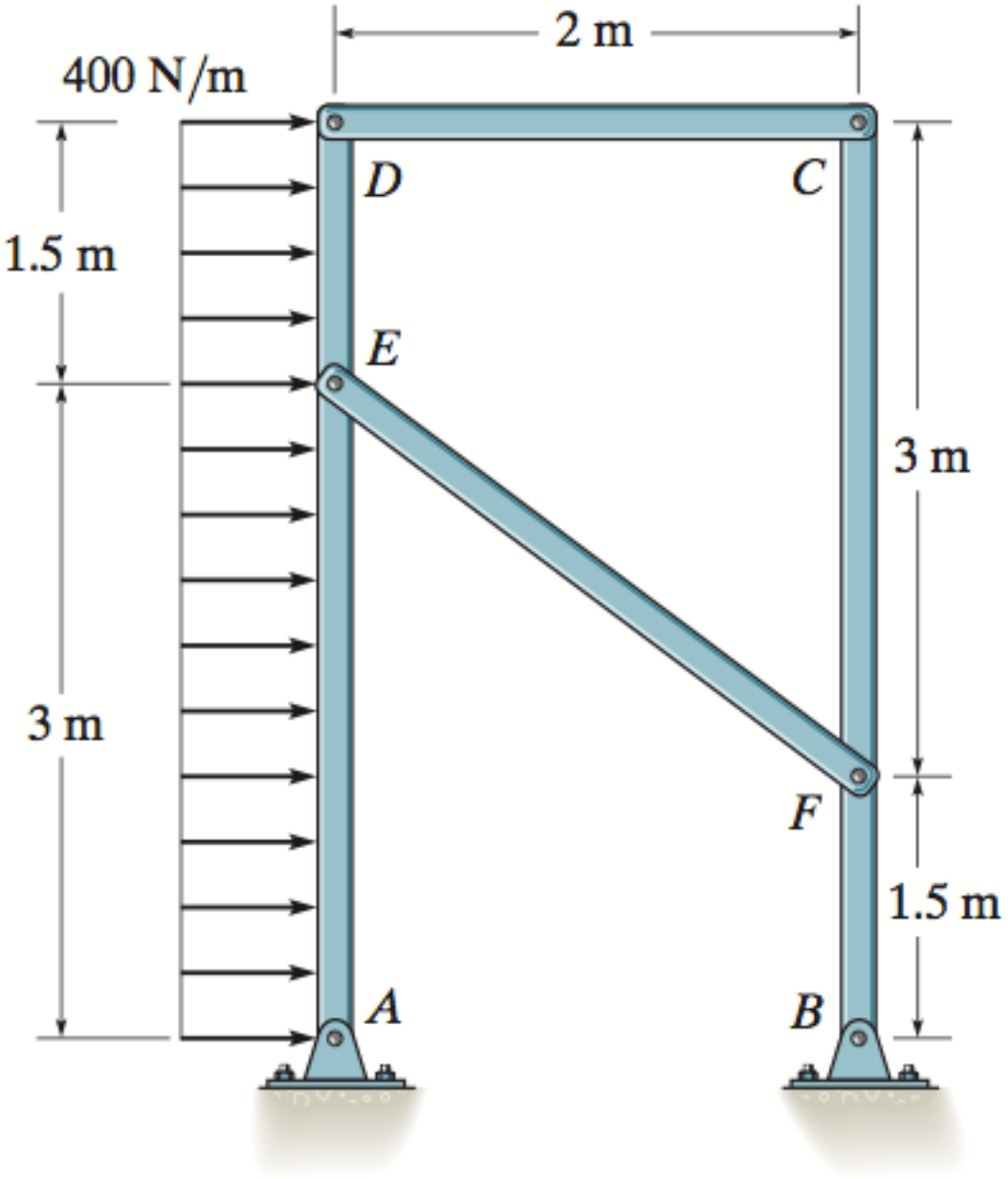

$\mathbf{D}_y$
$\mathbf{D}_x$
$\mathbf{F}_{BA}$
$\mathbf{W}$

Given: The wall crane supports an external load of 700 lb.

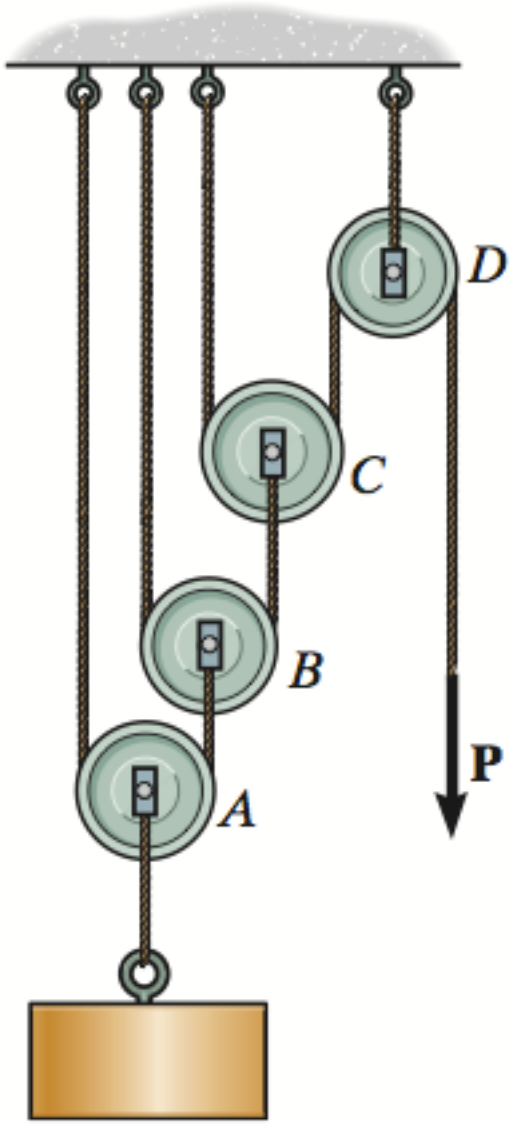
Find: The force in the cable at winch motor W and the horizontal and vertical components of pin reactions at *C* on beam *ABC*.



Determine the horizontal and vertical components of force which pin *B* exert on the frame.



Determine the force **P** required to hold the 100-lb weight in equilibrium.



Given: The pumping unit used to recover oil has force **F** acting in the wireline at the well head. The pitman, *AD*, is pin connected at its ends and has negligible weight.

Find: the torque **M** which must be exerted by the motor in order to overcome this load.