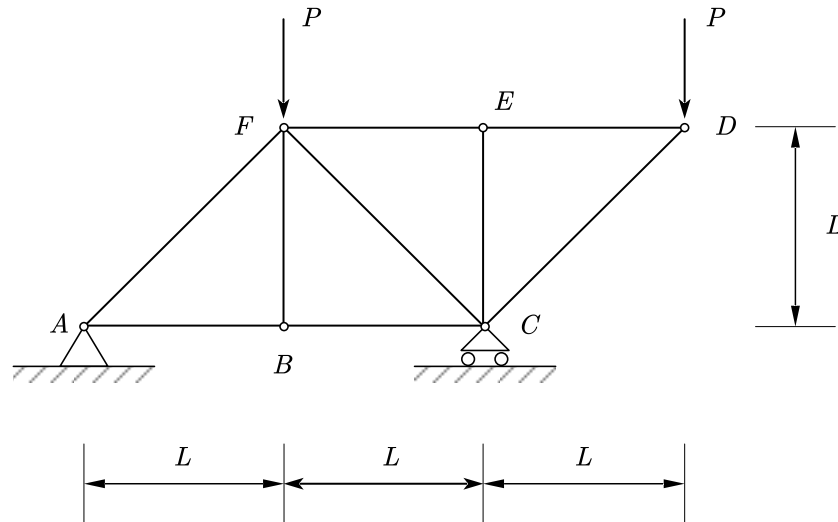


## Homework #5

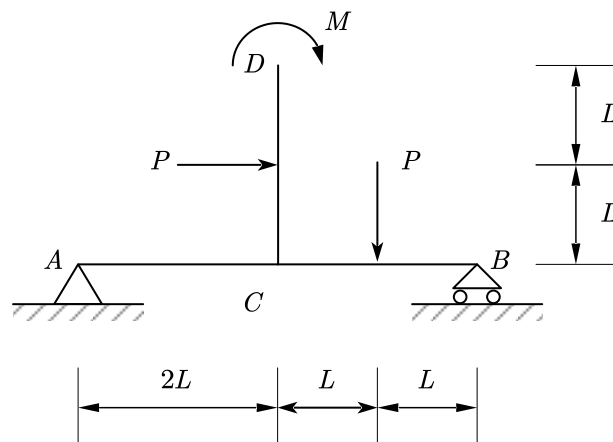
**Problem 1:** Considering the truss structure shown below:



A vertical load of  $P$  kN is applied at nodes  $D$  and  $F$ .  $AE$  is constant for all truss members.

- (1) Solve for the reactions at  $A$  and  $C$ .
- (2) Use the method of virtual forces to solve for the horizontal displacement at node  $D$
- (3) Use the method of virtual forces to solve for the vertical displacement at node  $D$

**Problem 2:** Consider the T-shaped structure shown below:



- (1) Use static analysis method to calculate the vertical reactions at support  $A$  and  $B$ .
- (2) Use the method of virtual displacements to calculate the vertical reactions at support  $A$  and  $B$ .
- (3) Use the method of virtual force to calculate the horizontal displacement at  $D$ .