



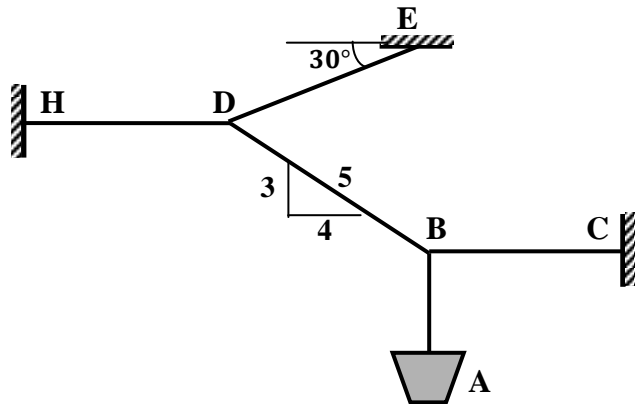
College of Engineering & Technology
 Department : Basic and Applied Sciences.
 Examinars : Prof. Dr. Mohamed Abbasi and the staff.
 Course : Engineering Mechanics (1)-Statics.
 Course Cod : BA141
 Final Exam.
 January- 2014

Marks : 40
 Time : 2 Hrs.

Answer the following questions:

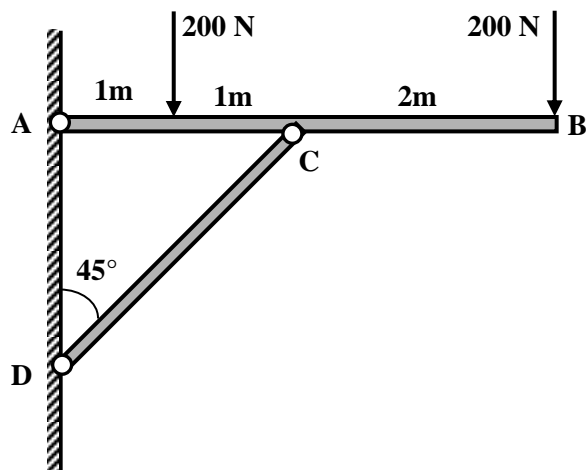
Question(1):(6-Marks):

If the bucket at A weighs 500 N ,
 determine the tension developed in
 each wire.



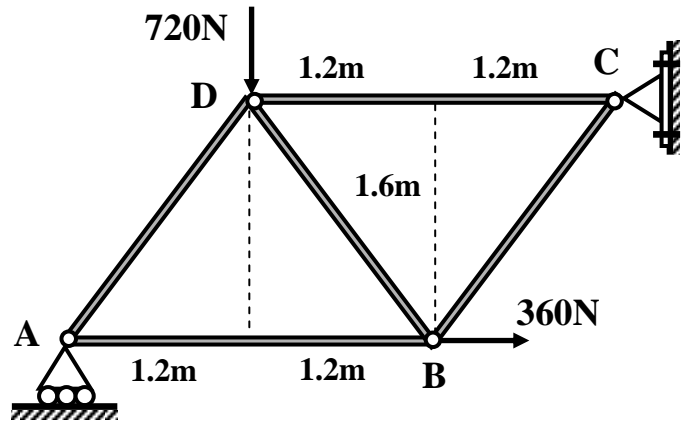
Question(2): (8-Marks):

In the shown equilibrium position
 of rod AB , Determine the
 horizontal and vertical
 components of reaction of the pin
 at A and the force in the
 weightless link CD



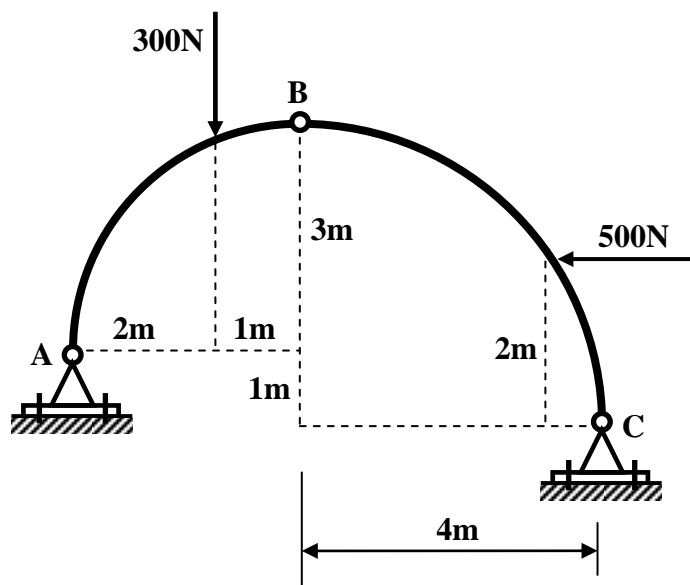
Question(3): (8-Marks):

For the shown truss, determine the force in each member. Indicate whether the members are in tension or compression.



Question(4): (10-Marks):

For the shown frame, determine the horizontal and vertical components of reactions of each of the pins A, B, and C.



Question(5): (8-Marks):

If the coefficient of static friction between the spool and the horizontal surface at C is $\mu_s = 0.2$ and the spool is about to slip, determine:

- a-the force in the weightless member AB.
- b-the normal reaction at C.
- c-the weight of the spool W.

