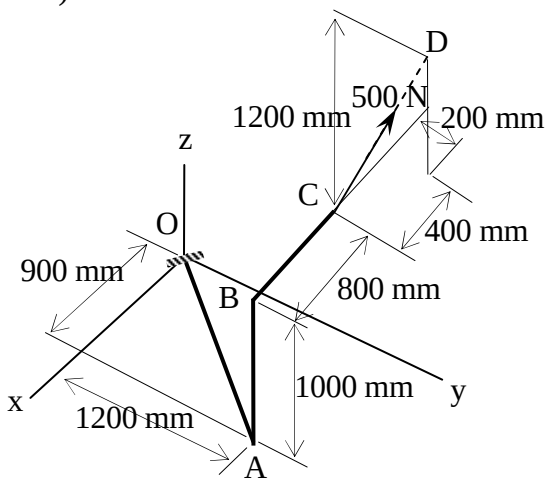
UNIVERSITY OF TORONTO
Department of Civil Engineering

CIV100F - MECHANICS – GROUP G (107)
Problem Set 5
Due: 5:00 pm on Monday October 15, 2012
In Dropbox #2 in GB422 (Computer Lab)

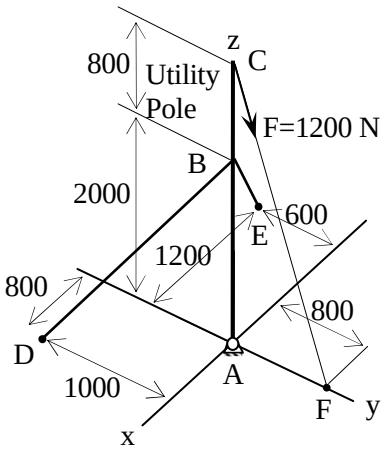
1. A pipe assembly is subjected to a force at C as shown.

i.) Determine the moment about segment OA.
ii.) Express the result as a Cartesian vector.



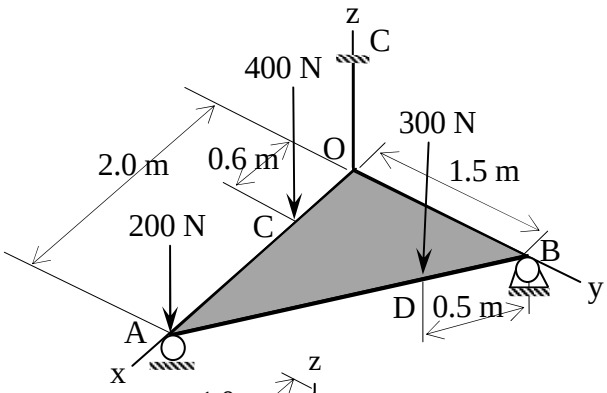
2. Utility pole ABC is supported by a ball and socket at A and two cables at B. A point load is applied at point C as shown. All dimensions shown are in mm. Determine:

i.) the tensions in both cables, and
ii.) all support reactions.



3. A slab supported by a roller at A, a ball-and-socket at B and a cable at O carries three forces at A, C and D as shown. Determine:

i.) the tension in cable OC, and
ii.) all support reactions.



4. A T-shaped member, supported by a pin at O and a cable at B, carries a hanging weight as shown. Determine:

i.) the tension in cable AB, and
ii.) all support reactions.