Practice Exam 2

1. A vertical force of 50 lb acts on the crankshaft. Determine the horizontal equilibrium force **P** that must be applied to the handle and the x, y, z components of reaction at the journal bearing A and thrust bearing B. The bearings are properly aligned and exert only force reactions on the shaft.



1. Determine the force in each member of the truss and state if the members are in tension or compression. There is a pin connection at A and a rocker at C.



1. Determine the force in members BC, FC, and FE. State if the members are in tension or compression. There is a pin connection at A and a roller at D.



1. The compound beam is supported by a rocker at B and is fixed to the wall at A. If it is hinged (pinned) together at C, determine the reactions at the supports.



1. A triangular plate is supported by a cable at A and a hinge at B. Its weight is 400 N and the material is homogeneous. Determine the tension in the cable and the loads acting on the plate at the hinge.

x

z

y

1.5 m

1.5 m

6 m

1. The structure is pin connected at *A* and has a roller at *C*. Is the structure statically determinate? What would this structure be considered – a truss, frame, or machine?

