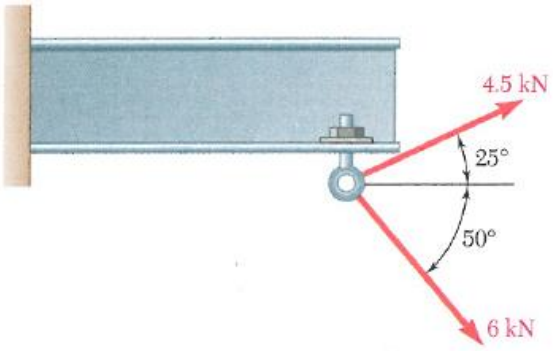
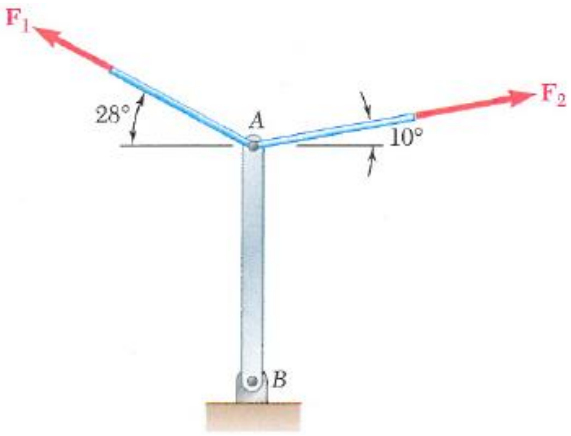
HOMEWORK 1

Q1)



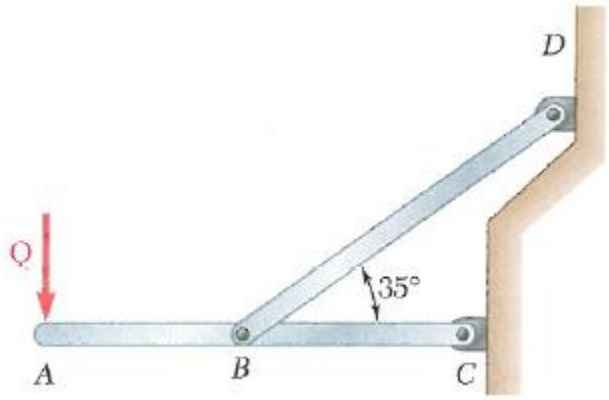
Two forces are applied to an eye bolt fastened to a beam. Determine graphically the magnitude and direction of the resultant (a) parallelogram law, (b) the triangle rule.

Q2)



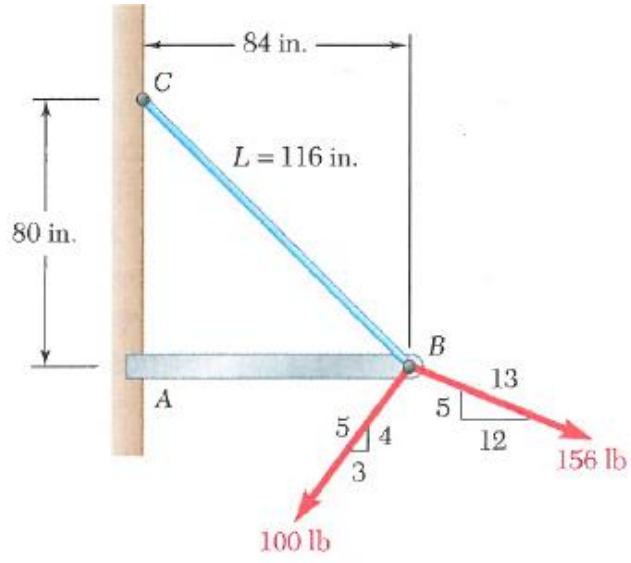
Two control rods are attached at A to lever AB. Using trigonometry and knowing that the force in the left-hand rod is F_1=120 N, determine (a) the required force F_2 in the right-hand rod if the resultant **R** of the forces exerted by the rods on the lever is to be vertical, (b) the corresponding magnitude of **R**.

Q3)



Member BD exerts on member ABC a force **P** directed along a line BD. Knowing that **P** must have a 960-N vertical component, determine (a) the magnitude of the force **P**, (b) its horizontal component.

Q4)



Knowing that the tension in the cable BC is 145 lb, determine the resultant of the three forces exerted at point B of beam AB.