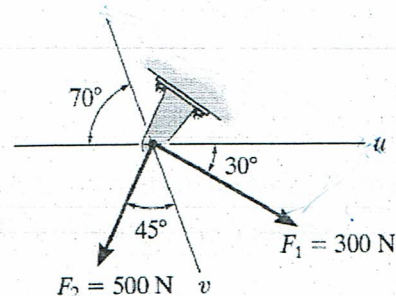


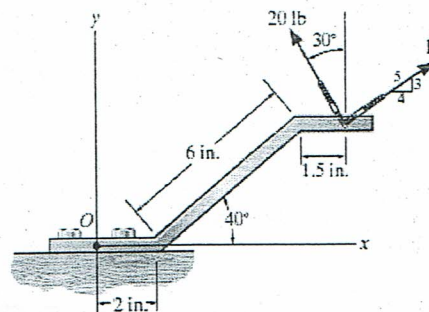


Note: Answer all questions

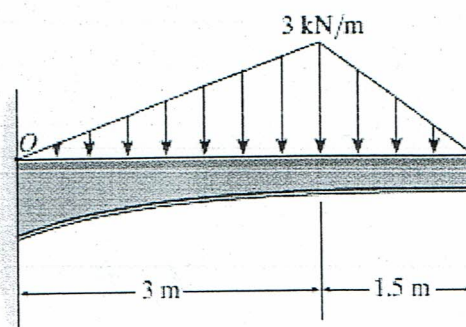
Q.1\ Determine the magnitude of the resultant force and its direction, measured clockwise from the positive u axis. (10-Marks)



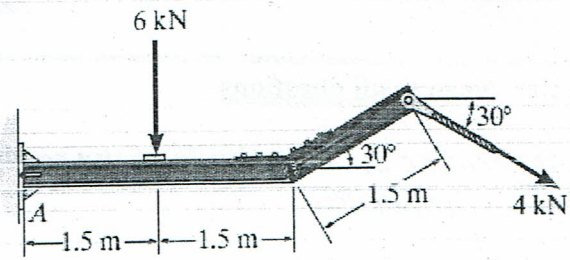
Q.2\ Replace the two forces by an equivalent resultant force and couple moment at point O. Take $F = 20$ lb. (20-Marks)



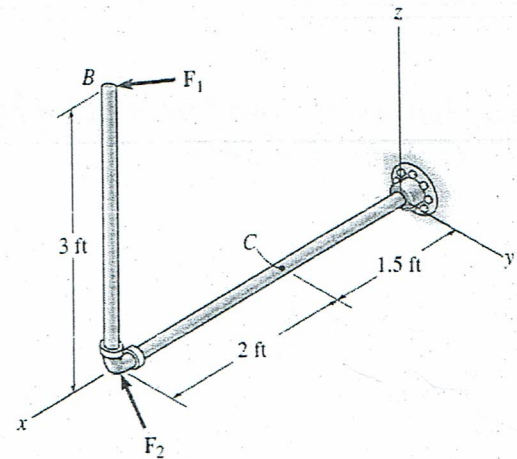
Q.3\ Replace the distributed loading with an equivalent resultant force, and specify its location on the beam measured from point O. (15-Marks)



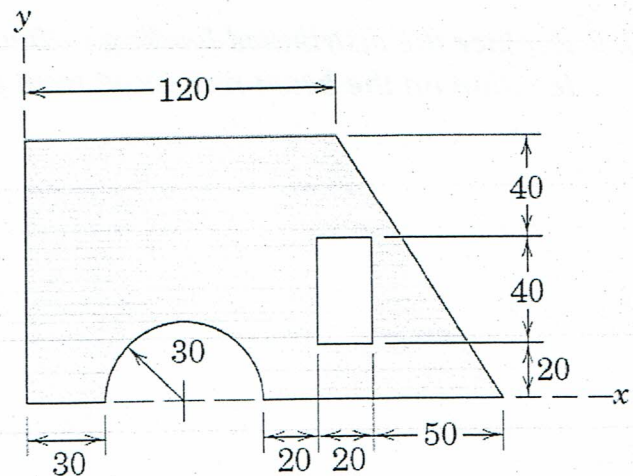
Q.4\ Determine the components of the support reactions at the fixed support A on the cantilevered beam. (15-Marks)



Q.5\ Determine the x, y, z components of force and moment at point C in the pipe assembly. Neglect the weight of the pipe. Take $F_1 = 350i - 400j$ lb and $F_2 = -300j + 150k$. (20-Marks)



Q.6\ Locate the centroid (\bar{X}, \bar{Y}) for the shaded area (all dimensions are in mm) (20-Marks)



GOOD LUCK

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