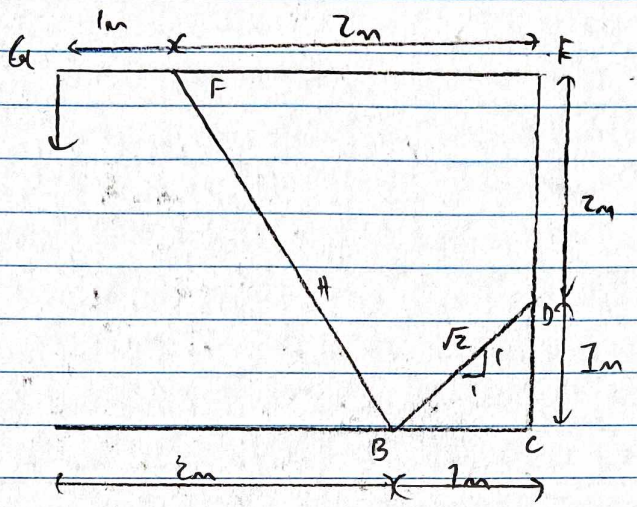
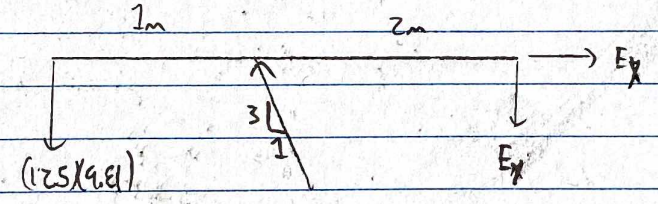
Solution: 21-S-6.6-MN-07



Beam GEF

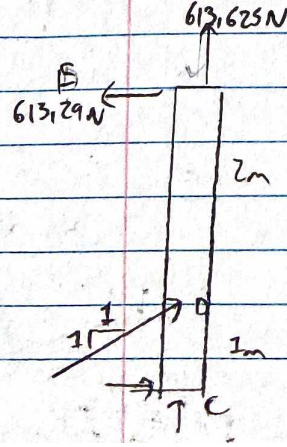


$\circlearrowleft \Sigma M_E = (125)(9.81)(1) - E_y(2m) \rightarrow E_y = 613.625\ N$

$\Sigma F_y = 0 = (-125)(9.81) + F_F\left(\frac{3}{\sqrt{10}}\right) - 613.625 \rightarrow F_F = 1939.40\ N$

$\therefore$ BF = 1939.4N in compression

$\Sigma F_x = 0 = -\frac{1}{\sqrt{10}}(1939.40) + E_x \rightarrow E_x = 613.29\ N$



$\circlearrowleft \Sigma M_C = -613.29\ N(3m) - D_x\frac{1}{\sqrt{2}}(1m) \rightarrow D = 2602.0\ N$