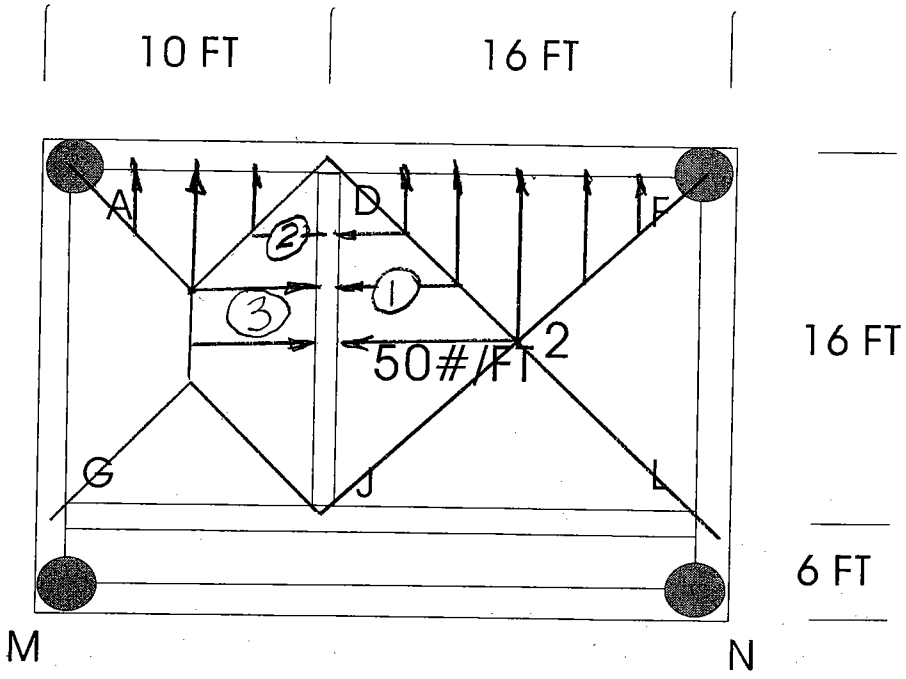
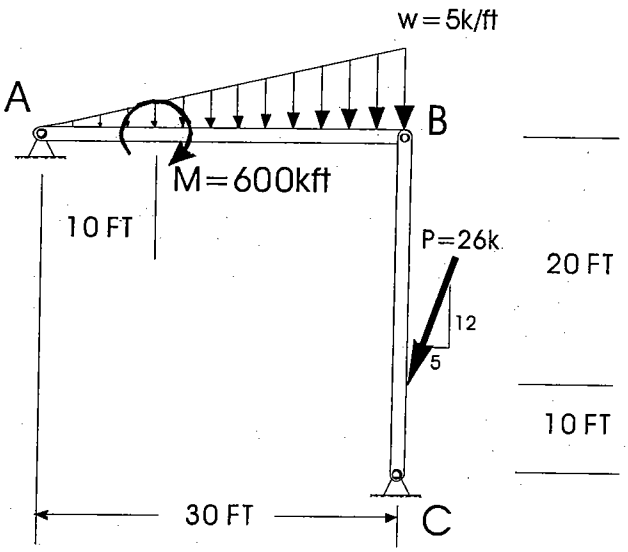
Mini Exam #1 Printed Name MASTER Seat # _____

Problem 1) For the two-way slab show below, show a sketch of the beam ADF with all applied loads on the beam. You need not solve for the beam's reactions at A and F, just a sketch of all applied loads and their magnitudes.



50 POINTS

Problem 2) For the frame shown, solve for the horizontal and vertical reactions at the PINS at A and C. A third pin is located at point B.



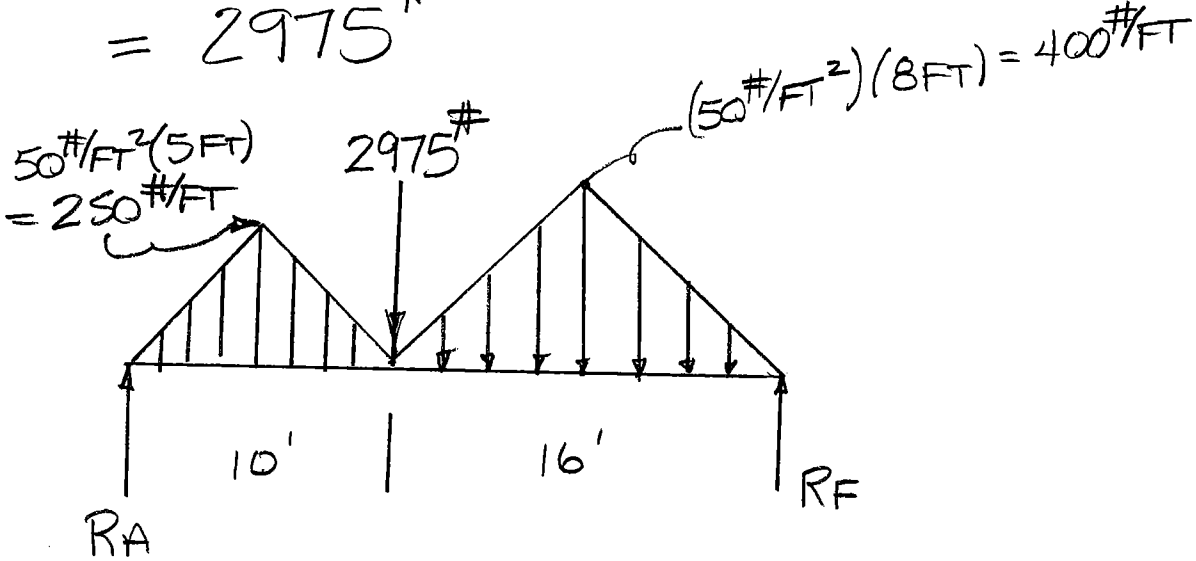
50 POINTS

Reaction at D due to ½ of total load on DJ:

$$50^{\#/FT^2}\left(\frac{8ft}{2}\right)^2 + 50^{\#/FT^2}\frac{(5ft)^2}{2} + 50^{\#/FT^2}(5ft)(3ft)$$

(1) (2) (3)

$$= 2975^{\#}$$

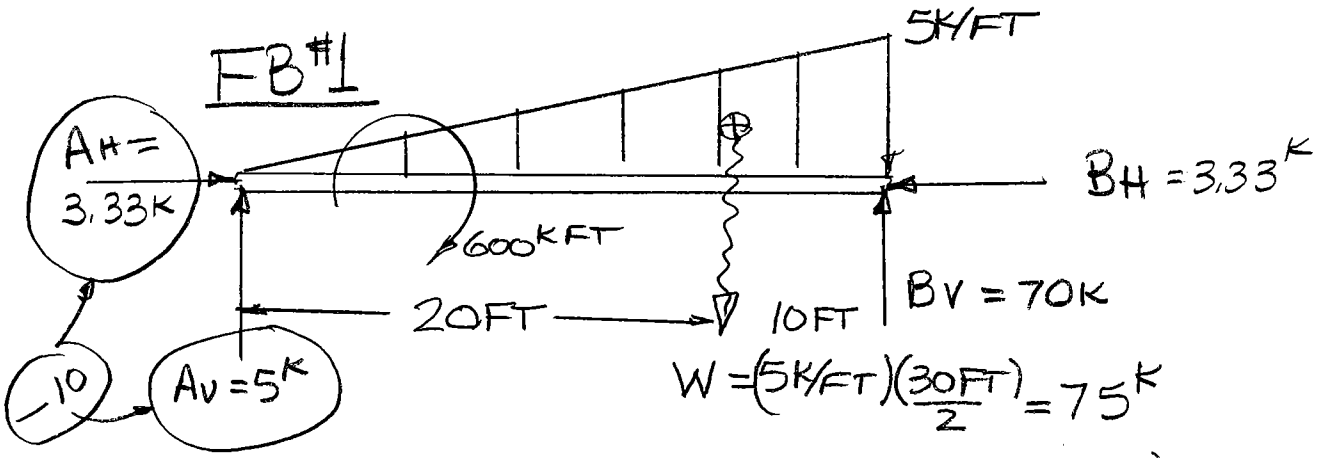


$250^{\#/FT}$ (-10)

$400^{\#/FT}$ (-10)

$2975^{\#}$ (-20)

Shape (-10)

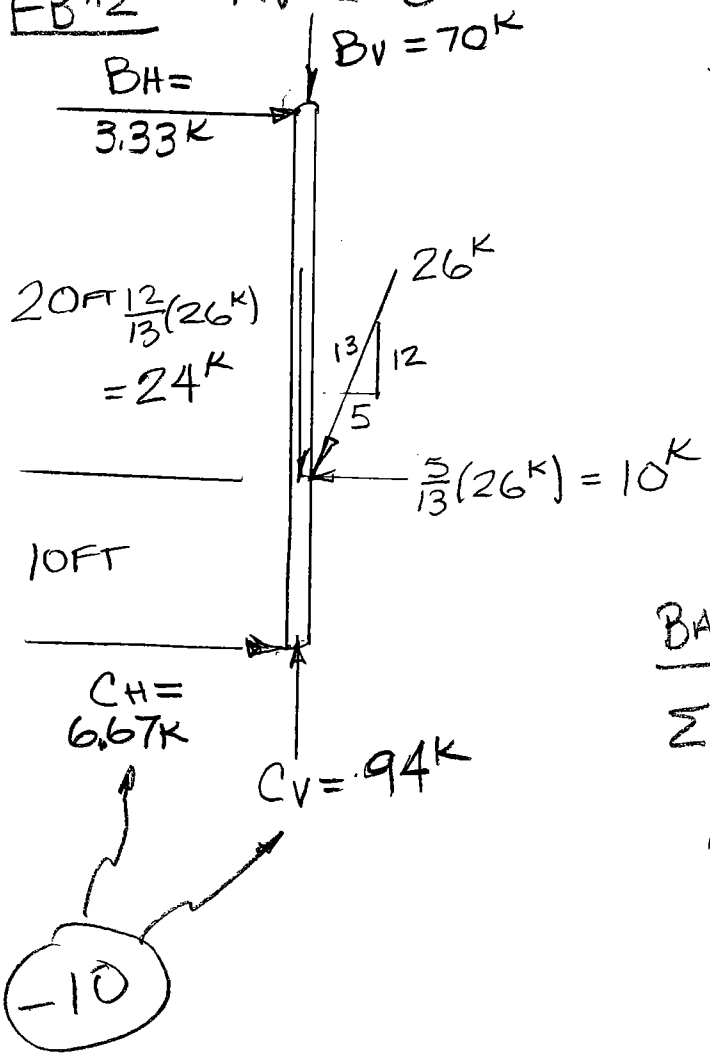


$\Sigma M_A = 0 = -600\text{KFT} - 75^K(20') + B_V(30')$

$B_V = 70^K$

$\Sigma F_V = 0 = +A_V - 75^K + 70^K$

$A_V = 5^K$



$\Sigma M_B = 0 = -10^K(20') + C_H(30')$

$C_H = 6.67^K$

$\Sigma F_H = 0 = B_H - 10^K + 6.67^K$

$B_H = 3.33^K$

$\Sigma F_V = 0 = -70^K + C_V - \frac{12}{13}(26^K)$

$C_V = 94^K$

BACK TO FB#1

$\Sigma F_H = 0 = A_H - 3.33^K$

$A_H = 3.33^K$