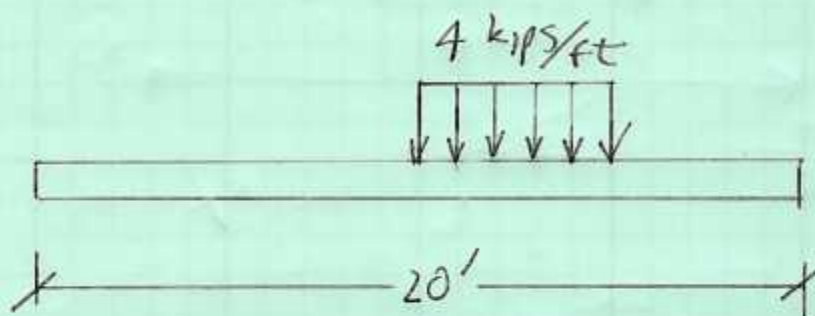


DISTRIBUTED LOADS EX.



PT LOAD MAGNITUDE (AREA OF RECTANGLE)
 LENGTH - 5', height 4(kips)

$$= 4 \text{ kips/ft} * 5 \text{ ft}$$

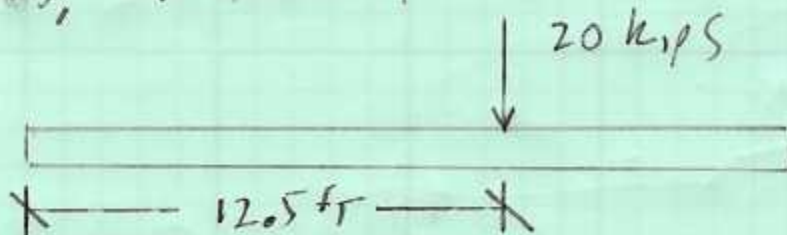
$$= 20 \text{ kips}$$

LOCATION

$$10 (\text{REF LEFT EDGE}) + \frac{\Sigma}{2}$$

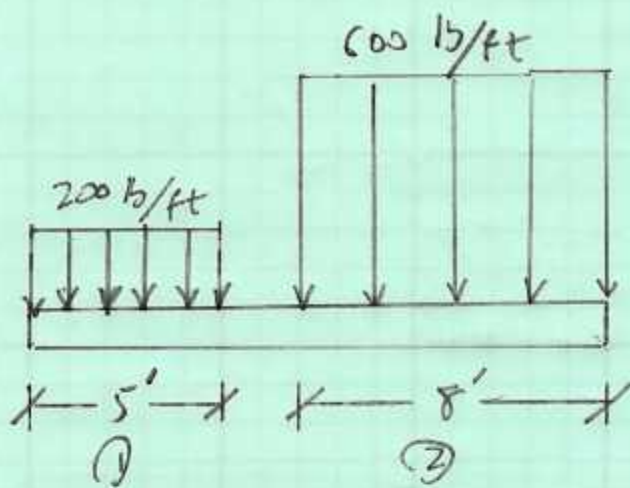
"MIDDLE" OR CENTROID - EG 12.5 FT

THUS, EQUIVALENT POINT LOAD



C3

DISTINGUISHED LOADS



LOADS

$$(1) \quad 200 \text{ lb/ft} \times 5 \text{ FT}$$

$$\underline{1000 \text{ lb}}$$

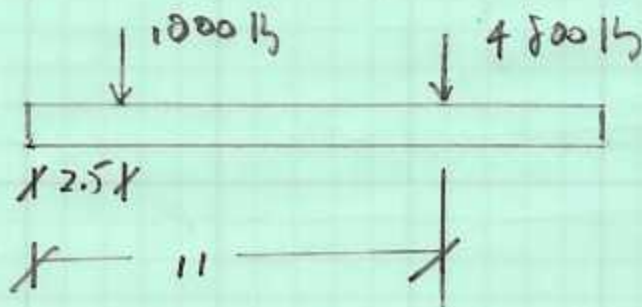
$$(2) \quad 600 \text{ lb/ft} \times 8 \text{ FT}$$

$$\underline{4800 \text{ lb}}$$

LOCATIONS (REFERENCED TO LEFT EDGE OF BEAM)

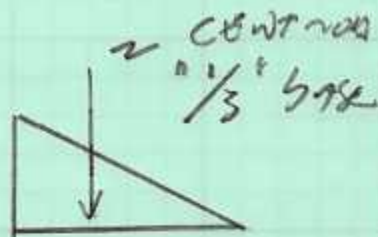
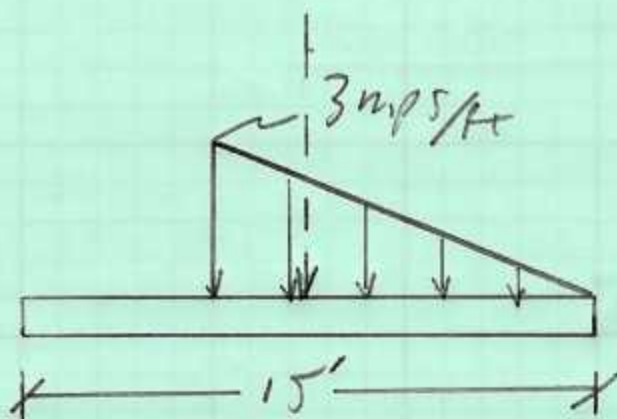
$$(1) \quad \frac{5'}{2} = \underline{2.5 \text{ FT}}$$

$$(2) = 7 + 8\left(\frac{1}{2}\right) = \underline{11 \text{ FT}}$$



c3

non-uniform just (avg)



$$\text{LOAD} = \frac{1}{2} (10' * 3 \text{ kips/ft})$$

$$= 15 \text{ kips}$$

(TRIANGLE AREA)

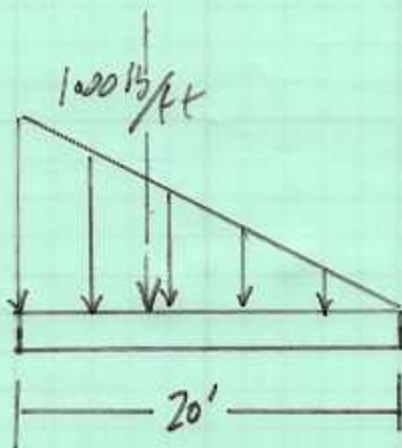
LOCATION

$$= 5 \text{ ft} + \frac{1}{3} (10 \text{ ft})$$

$$= \underline{8 \frac{1}{3} \text{ ft}}$$

C3

NON-UNIFORM DIST LOADS

LOAD

$$= \frac{1}{2} (1000 \text{ lb/ft}) (20 \text{ ft})$$

$$= \underline{10000 \text{ lb or } 10 \text{ kips}}$$

LOCATION

$$= \frac{1}{3} (20')$$

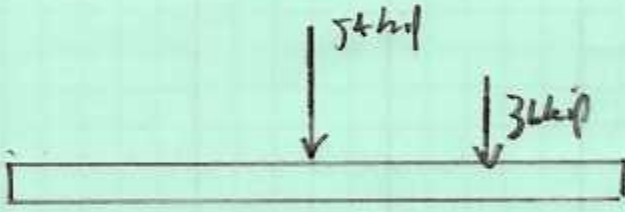
$$= \underline{6.67'} \text{ (REF LEFT EDGE)}$$

① LOAD $\frac{1}{2} (11' - 2') (12 \text{ kip/ft})$
 $= 54 \text{ kip}$

LOCATION $= 2' + 6'$
 $= 8' \checkmark$

② LOAD $= (3 \text{ ft}) (12 \text{ kip/ft})$
 $= 36 \text{ kip}$ REF LEFT EDGE

LOCATION $= 11' + 1.5'$
 $= 12.5'$ REF LEFT edge



COES FOR GIST 60905

Uniform:

$$\text{LOAD} = \text{AREA} \left(\text{LOAD/FT} \text{ is } \frac{\text{lbs}}{\text{ft}}, \frac{\text{kip}}{\text{ft}} \right)$$

LOAD/FT IS RECTANGLE HEIGHT

DISTRIBUTED LENGTH IS APPLIED DISTANCE

"AREA" IS PT LOAD EQUIVALENT

NON-UNIFORM:

SAME STORY - DIFFERENT "JAY"

"AREA" = EQUIVALENT PT LOAD

JUST TRIANGLE AREA $\left(\frac{1}{2} b h \right)$

$$h = \text{LOAD/FT}$$

$$b = \text{distributed length}$$