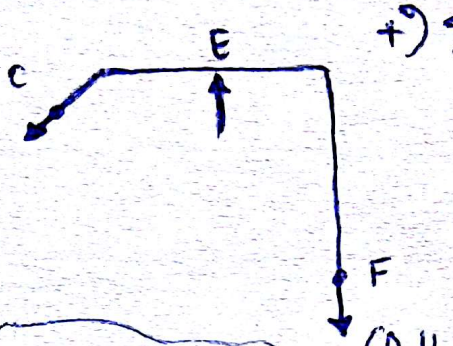
① $A = (1/8)(1) = 1/8\ in^2$

a) Para $\theta = 0°$



$+\circlearrowleft \Sigma M_C = 0$

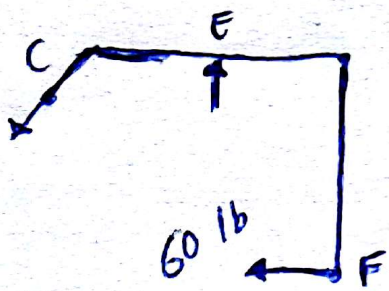
$-60(16) + F_{DE}(12) = 0$

$F_{DE} = \frac{16}{12}(60)$

$\therefore F_{DE} = 80\ lb$

$\sigma_{DE} = -\frac{80}{(1/8)} = \boxed{-640\ lb/in^2}$

b) Para $\theta = 90°$



$+\circlearrowleft \Sigma M_C = 0 \rightarrow -60(8) + F_{DE}(12) = 0$

$F_{DE} = \frac{8}{12}(60) = 40\ lb$

$\sigma_{DE} = -\frac{F_{DE}}{A} = -\frac{40}{(1/8)} = \boxed{-320\ lb/in^2}$