

**6-2**  $S_y = 50$  kpsi

$$\text{MSS: } \sigma_1 - \sigma_3 = S_y/n \quad \Rightarrow \quad n = \frac{S_y}{\sigma_1 - \sigma_3}$$

$$\text{DE: } (\sigma_A^2 - \sigma_A\sigma_B + \sigma_B^2)^{1/2} = S_y/n \quad \Rightarrow \quad n = S_y / (\sigma_A^2 - \sigma_A\sigma_B + \sigma_B^2)^{1/2}$$

$$\text{(a) MSS: } \sigma_1 = 12 \text{ kpsi, } \sigma_3 = 0, n = \frac{50}{12 - 0} = 4.17 \text{ Ans.}$$

$$\text{DE: } n = \frac{50}{[12^2 - (12)(12) + 12^2]^{1/2}} = 4.17 \text{ Ans.}$$

$$\text{(b) MSS: } \sigma_1 = 12 \text{ kpsi, } \sigma_3 = 0, n = \frac{50}{12} = 4.17 \text{ Ans.}$$

$$\text{DE: } n = \frac{50}{[12^2 - (12)(6) + 6^2]^{1/2}} = 4.81 \text{ Ans.}$$