Problem 4

- Spherical Tank
- $p = 500 psi$, $d = 60 ft$
- $\sigma_{yield} = 80 ksi$

Determine: The minimum thickness if the factor of safety is 3.2

$$\sigma_{allow} = \frac{80 ksi}{3.2} = 25 ksi$$

$$\sigma_1 = \sigma_2 = \frac{pr}{2t}$$

$$25{,}000 psi = \frac{(500 psi)(60 ft \times \frac{12 in}{ft})}{2t}$$

$$t = 3.6 in$$

Round up to $\boxed{3.75 in}$