

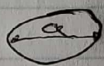
Ch: 1

48, 38, 63, 76, 92, 107

Ch: 2

17, 18, 27, 35, 61

48) A coin press requires 18,000 lb-force

Diameter  $a$  

$$a = 2.50 \text{ in}$$

$$P = F/A$$

$$2.50 \text{ in} / 2 = r$$

$$P = \frac{18,000 \text{ lb} \cdot \text{force}}{4.908 \text{ in}^2}$$

$$A = \pi r^2$$

$$= \pi 1.25 \text{ in}^2$$

$$= \pi 1.5625 \text{ in}^2$$

$$A = 4.908 \text{ in}^2$$

$$P = 3667.48 \text{ psi}$$

58) Compute pressure  $\Delta$  required to achieve a  $\Delta$  in mercury of 1.00%

$$E = \frac{-\Delta P}{(\Delta V/V)}$$

$$\Delta P = \frac{-E}{\Delta V/V}$$

$$\Delta P = \frac{+3590000 \text{ psi}}{+0.01} = \frac{-24750 \text{ MPa}}{-0.01}$$

$$\Delta P = 3.59 \times 10^8 \text{ psi}$$

$$\Delta P = 359,000,000 \text{ psi}$$

$$\Delta P = 2,473,000 \text{ MPa}$$