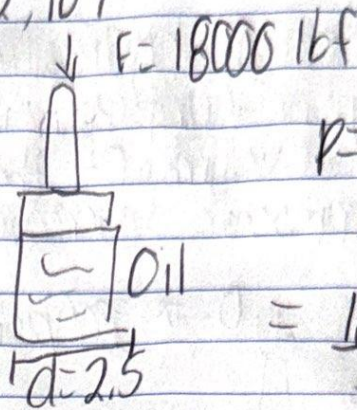


Ch1 - 48, 58, 63, 76, 92, 107

1.48 $F = 18000 \text{ lb}$
 $d = 2.5 \text{ in}$

$$A = \frac{\pi d^2}{4}$$
$$= \frac{\pi 2.5^2}{4}$$
$$= 4.91 \text{ in}^2$$



$$P = \frac{F}{A}$$

$$= \frac{18000 \text{ lbf}}{4.91 \text{ in}^2}$$

$$P = 3665.9 \text{ psi}$$

1.58 $\epsilon = -\frac{\Delta p}{\Delta V/V}$

$$\Delta p = -E \left(-\frac{\Delta V}{V} \right)$$

$$\Delta p = 3590000 (0.01)$$
$$\Delta p = 35,900 \text{ psi}$$

$$1\% = 0.01$$

$$\text{mercury} = 3590000 \text{ psi}$$

Chapter 2-17, 18, 27, 35, 61

17) 4 types of non newtonian fluids

- 1) thixotropic fluids
- 2) rheopectic fluids
- 3) electrorheological fluids
- 4) magnetorheological fluids

18) Viscosity of water @ $40^{\circ}\text{C} = 6.25 \times 10^{-4} \text{ Pa}\cdot\text{s}$

27) viscosity of hydrogen @ $40^{\circ}\text{C} = 1.25 \times 10^{-5} \text{ Pa}\cdot\text{s}$

35) Viscosity of SAE 30 @ $210^{\circ}\text{F} = 2.2 \times 10^{-4} \frac{\text{lb}_f}{\text{ft}^2 \cdot \text{s}}$

Max. Temp.

$W = 77^{\circ}\text{F}$

$L = 10^{\circ}\text{F}$

$h = 95^{\circ}\text{F}$

17