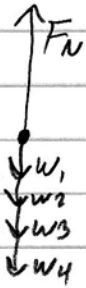


Chapter 9 Homework 1

15)



A) $\sum F = 0 = m_1 g + m_2 g + m_3 g + m_4 g + F_N$
 $0 = 75(-10) + 68(-10) + 62(-10) + 55(-10) + F_N$

$$F_N = 2600 \text{ N}$$

B) $P = \frac{F}{A} = \frac{1300}{.0425} = 30,500 \text{ Pa}$

C) Different assuming they wear diff. size shoes

23) $P_v = 1.33 \times 10^3 \text{ Pa}$

$h = ?$

$D = 1020 \text{ kg/m}^3$

$P = P_0 + \rho g h$

$1.33 \times 10^3 = 1020(10)(h)$

$$h = 0.130 \text{ m}$$

26) $\frac{F_1}{A_1} = \frac{F_2}{A_2}$

① $A_1 = \pi r^2 = \pi (.125)^2 = 0.04909$

$A_2 = \pi r^2 = \pi (.75)^2 = 1.7671$

② $\frac{F_1}{.04909} = \frac{500}{1.7671}$

$1.7671 F_1 = 24.545$

$$F_1 = 13.89 \text{ lbs}$$