

I worked with Elson

Chpt 3: 6-10, 11, 13

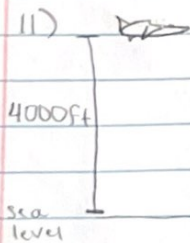
6) True: absolute is gage + atmosphere pressure.

7) False: you could be on a mountain or below sea level.

8) Can be True: if the certain tank was a vacuum.

9) Can be True: only need 0.433 psi to move water 1ft
vertically

10) Can be True: 175 kPa is very close to normal atmospheric
pressure ~ 101.325 kPa



$$P_{atm} = \gamma h$$

$$\gamma = \left(\frac{14.7 \frac{\text{lb}}{\text{in}^2}}{4000 \text{ft}} \right) = 0.003675 \frac{\text{lb}}{\text{in}^2 \cdot \text{ft}}$$

$$\gamma = \left(\frac{14.7 \frac{\text{lb}}{\text{in}^2}}{48,000 \text{in}} \right) = 0.00030625 \frac{\text{lb}}{\text{in}^3}$$

$$\gamma = \rho g \Rightarrow 0.003675 \frac{\text{lb}}{\text{in}^2 \cdot \text{ft}} = \rho (32.174 \frac{\text{ft}}{\text{s}^2})$$

googled value

$$P = \gamma h \Rightarrow P = (0.075 \frac{\text{lb}}{\text{ft}^3})(4000 \text{ft}) = 300 \frac{\text{lb}}{\text{ft}^2}$$
$$\gamma = 0.075 \frac{\text{lb}}{\text{ft}^3}$$

13) 0, surface and using gage pressure.

