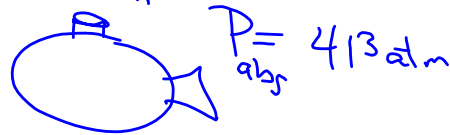


2004B  
② Pressure  
 $p = 1025 \frac{\text{kg}}{\text{m}^3}$



a)  $P_{\text{gauge}} = 412 \text{ atm}$   
 $= P_{\text{abs}} - P_{\text{atm}}$   
 $= 413 - 1 \text{ atm}$

b)

$$\rho gh = 412 \text{ atm} \left( \frac{101.3 \text{ kPa}}{1 \text{ atm}} \right)$$
$$h = 4100 \text{ m}$$

c)  $P = \frac{F}{A} \Rightarrow P_a = \frac{N}{\text{m}^2}$

$$F = P(A) = (412 \text{ atm})(0.100 \text{ m}^2)$$

d)

$$v_0 = 0$$
$$v_f = 10 \frac{\text{m}}{\text{s}}$$
$$t = 30 \text{ s}$$

$$a = \frac{\Delta v}{t} = 3.33 \frac{\text{m}}{\text{s}^2}$$

e)

$$d = v_0 t + \frac{1}{2} a t^2$$
$$d = \frac{1}{2} (3.33 \frac{\text{m}}{\text{s}^2}) (30 \text{ s})^2$$
$$= \frac{10 \cdot 30}{2} = 150 \text{ m}$$

f)  $\Delta y = D - d$   
 $= 4100 \text{ m} - 150 \text{ m}$