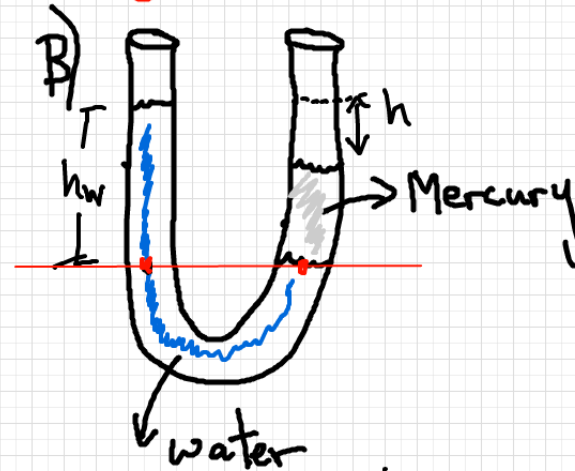
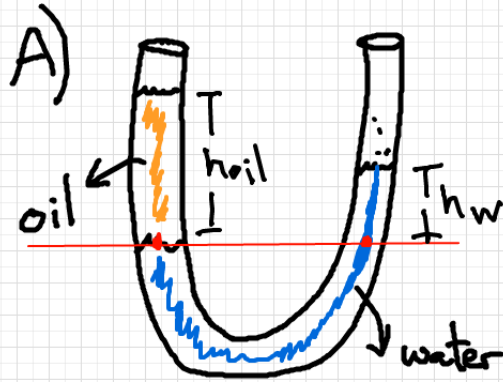
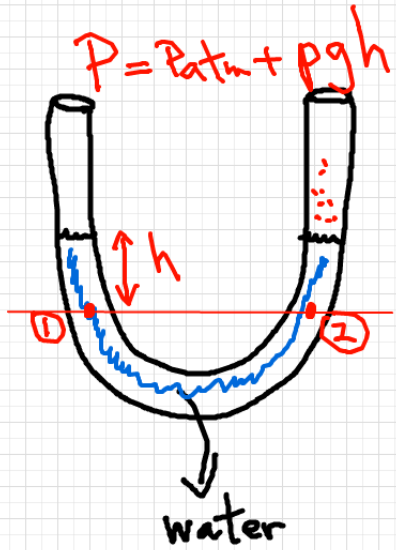


# A Tale of Two Fluids → Hydrostatics



$$A) P = P_{atm} + \rho_{oil} g h_{oil} = P_{atm} + \rho_w g h_w$$

$$\frac{\rho_{oil}}{\rho_w} = \frac{h_w}{h_{oil}} = \frac{890}{1000} = 0.89$$

$$\frac{h_w}{h_{oil}} = 0.89$$

fluid	$\rho$ (kg/m <sup>3</sup> )	
water	1000	<span style="color: blue;">█</span>
oil	890	<span style="color: orange;">█</span>
Mercury	13600	<span style="color: gray;">█</span>

$$B) P = P_{atm} + \rho_w g h_w = P_{atm} + \rho_M g (h_w - h)$$

$$\frac{\rho_w}{\rho_M} = \frac{h_w - h}{h_w} = 1 - \frac{h}{h_w} \Rightarrow \frac{h}{h_w} = 1 - \frac{\rho_w}{\rho_M}$$

$$\frac{h}{h_w} = 1 - \frac{\rho_w}{\rho_M}$$