18. (a) The force on face A of area A_A is

$$\begin{aligned} F_A &= p_A A_A = \rho_w g h_A A_A = 2\rho_w g d^3 \\ &= 2\left(1.0\times 10^3\,\mathrm{kg/m^3}\right)\left(9.8\,\mathrm{m/s^2}\right)(5.0\,\mathrm{m})^3 = 2.5\times 10^6\ \mathrm{N}\ . \end{aligned}$$

(b) The force on face B is

$$\begin{aligned} F_B &= p_{\mathrm{avg}B} A_B = \rho_w g\left(\frac{5d}{2}\right) d^2 = \frac{5}{2}\rho_w g d^3 \\ &= \frac{5}{2}\left(1.0\times 10^3\,\mathrm{kg/m^3}\right)\left(9.8\,\mathrm{m/s^2}\right)(5.0\,\mathrm{m})^3 = 3.1\times 10^6\ \mathrm{N}\ . \end{aligned}$$

Note that these figures are due to the water pressure only. If you add the contribution from the atmospheric pressure, then you need to add $F' = (1.0\times 10^5\,\mathrm{Pa})(5.0\,\mathrm{m})^2 = 2.5\times 10^6\,\mathrm{N}$ to each of the figures above. The results would then be $5.0\times 10^6\,\mathrm{N}$ and $5.6\times 10^6\,\mathrm{N}$, respectively.