§6.6 Part II: Pressure

(Created by Faan Tone Liu)

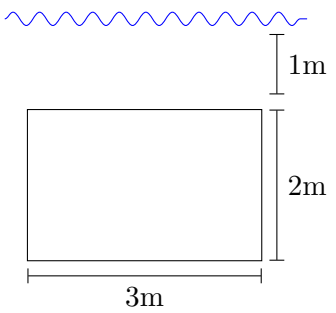
Key Points:

- Pressure $= P = \rho \cdot g \cdot d$
  - $\rho =$ mass density of fluid
  - $g = 9.8 \frac{\text{m}}{\text{sec}^2}$
  - $d =$ depth
  - Units:
- Force = Pressure $\times$ Area

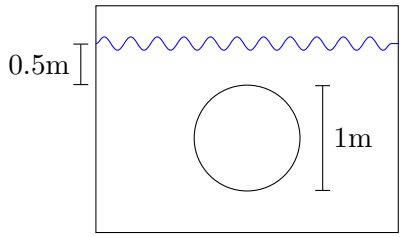
Examples:

1. A 3m $\times$ 2m piece of glass sits horizontally 8m under water. What is the force on each side of the glass?

2. A 3m $\times$ 2m piece of glass sits underwater as shown with its top 1m from the surface of the water. Find the force on each side of the glass.



3. A round observation window behind the Millenium Hotel looks through a cement wall into boulder creek. What is the force on the window?



4. The approximate dimensions of Hoover Dam are shown. Model it as a trapezoid, and calculate the force the water pressure puts on the dam.