Physics Cheat-Sheat

Equations

$$\text{Force} = \text{Mass} \times \text{Acceleration}$$
$$\text{Force} = \text{Pressure} \times \text{Area}$$
$$\text{Work} = \text{Force} \times \text{Distance}$$

Units

Quantity	English Units	Metric (SI) Units
Time	Seconds (sec)	Seconds (sec)
Length or Distance	Feet (ft), Miles (mi)	Meters (m)
Mass	—	Kilograms (kg)
Force or Weight	Pounds (lb)	Newtons ($\text{N} = \text{kg} \cdot \text{m/sec}^2$)
Work or Energy	Foot-Pounds ($\text{lbf} = \text{ft} \cdot \text{lb}$)	Joules ($\text{J} = \text{N} \cdot \text{m} = \text{kg} \cdot \text{m}^2/\text{sec}^2$)
Mass Density	—	kg/m^3
Weight Density	lb/ft^3	—
Pressure	Pascal ($\text{Pa} = \text{N/m}^2$)	Pounds per square foot (lb/ft^2)

Metric prefixes

Prefix	Meaning	Example
nano	10^{-9}	1 nanosecond = 1 ns = 10^{-9} seconds
micro	10^{-6}	1 microsecond = 1 μs = 10^{-6} seconds
milli	10^{-3}	1 milligram = 1 mg = 10^{-3} gram
centi	10^{-2}	1 centimeter = 1 cm = 10^{-2} gram
kilo	10^{3}	1 kilometer = 1 km = 10^{3} meters
mega	10^{6}	1 megabyte = 1 MB = 10^{6} bytes
giga	10^{9}	1 gigahertz = 1 GHz = 10^{9} Hertz

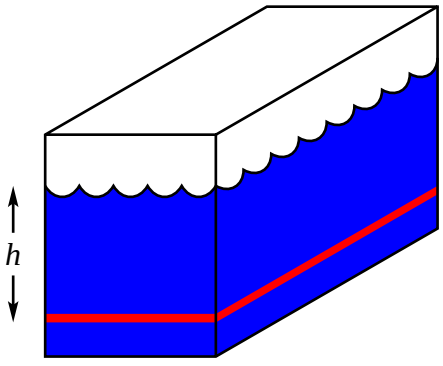
Pressure

To calculate the pressure underwater:

$$P = \delta g h$$

Where

$P =$ Pressure
$\delta =$ The mass density of the water
$g =$ Acceleration due to gravity
$h =$ Depth underwater.



Constants

Acceleration of gravity near the Earth's surface $= g = 9.8\,\text{m/sec}^2$
Mass density of water $= \delta = 1000\,\text{kg/m}^3$
Weight density of water $= \delta g = 62.4\,\text{lb/ft}^3$