# Bernoulli's Theorem Equations

1) Bernoulli's Theorem General Equation

$P + \rho gh + (1/2)\rho v^2 = \text{constant}$

Where, P = pressure

P = density of the fluid

v = velocity of the fluid

h = height at which the fluid is flowing

g = acceleration due to gravity

2) Bernoulli's Theorem and Conservation of Energy

$P1 + \rho.gh1 + (1/2)\rho V1^2 = P2 + \rho.gh2 + (1/2)\rho V2^2$

Where, $P1 + \rho.gh1 + (1/2)\rho V1^2$ = total energy at point 1

$P2 + \rho.gh2 + (1/2)\rho V2^2$ = total energy at point 1

3) Bernoulli's Theorem at Same Height or Depth

In this case, h1 = h2 as the height is the same, so there will be no change in the potential energy component.

The modified Bernoulli's theorem equation becomes:

$P1 + (1/2)\rho V1^2 = P2 + (1/2)\rho V2^2$

4) Bernoulli's Theorem for Static Fluids

Static fluids mean the fluid is at rest and it is not moving.

So, in this case, V1 = V2 = 0

The modified Bernoulli's Theorem equation becomes:

$P1 + \rho.gh1 = P2 + \rho.gh2$