# **Big Ideas: Fluid Dynamics - Differential Form of Momentum Conservation**

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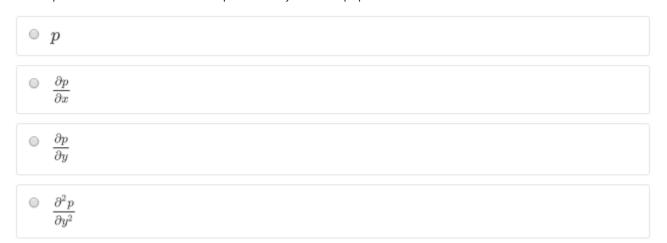
1. Introduction
2. Differential Form of Mass Conservation
3. Differential Form of Momentum Conservation
4. Integral Form of Conservation Equations

#### **Pressure Force**

## **Check Your Understanding**

1 point possible (graded)

The **net** pressure force on an infinitesimal fluid particle in the y direction is proportional to:



### **Viscous Forces**

## **Check Your Understanding**

Select true or false.

$$\left(\frac{\partial \tau_{xy}}{\partial x} + \frac{\partial \tau_{yy}}{\partial y}\right)$$

The net viscous force on the infinitesimal fluid particle in the y direction is proportional to

- True
- False

**Viscous Forces for Newtonian Fluid** 

Acceleration

**Governing Equations in Differential Form** 

**Check Your Understanding** 

Select the option that best describes the physical meaning of the following term in the momentum equation:

- Acceleration of an infinitesimal particle in the x direction due to motion in the x direction
- Acceleration of an infinitesimal particle in the x direction due to motion in the y direction
- Acceleration of an infinitesimal particle in the y direction due to motion in the x direction
- Acceleration of an infinitesimal particle in the y direction due to motion in the y direction

Go to Step 4: Integral Form of Conservation Equations

Go to all (FLUENT) Learning Modules