\[
\dot{\gamma} = \frac{du}{dy}
\]

[ \text{[s}^{-1}\text{]} ]

Fluid deforms continuously under shear

t_1 \rightarrow t_2

Basic equations/laws:

1. C.O. Mass
2. C.O. Linear Momentum [Newton's 2nd]
3. C.O. Energy (1st Law Thermo)
4. 2nd Law Thermo (Entropy)
System = fixed quantity of mass
control volume = region in space

Lagrangian vs. Eulerian
- monitor only the CV
- following one or more particles

\[ F = ma \]

Fluid statics (u=0) \( \nabla V = 0 \)
\[ A = \pi d^2 / 4 \]
\[ V = \frac{\pi d^2}{4} h = Ah \]

\[ d \to h' = h \]

\[ P = ? \]

\[ P_{abs} = P_{gage} + P_{atm} \approx 35.6 + 14.7 \text{ psi} \]

\[ W = PA \]