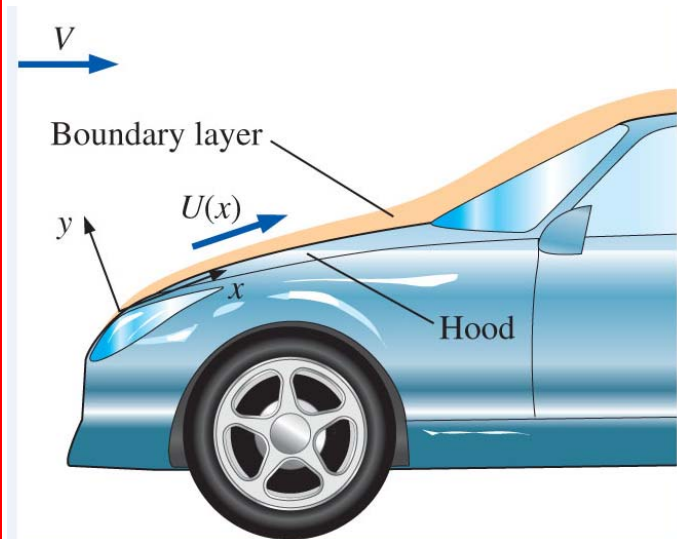
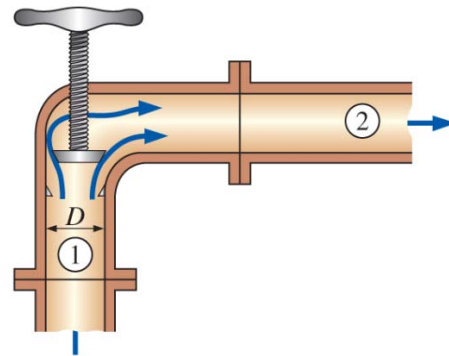
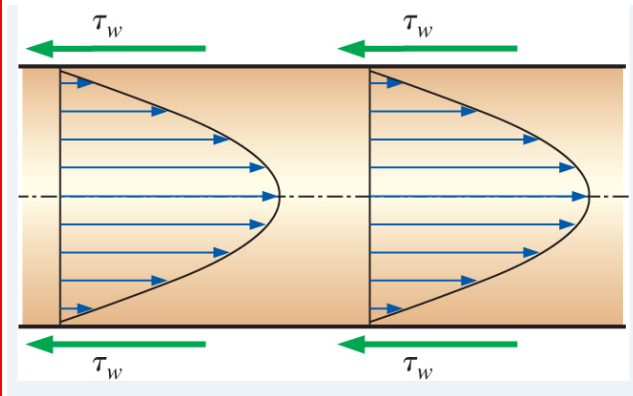
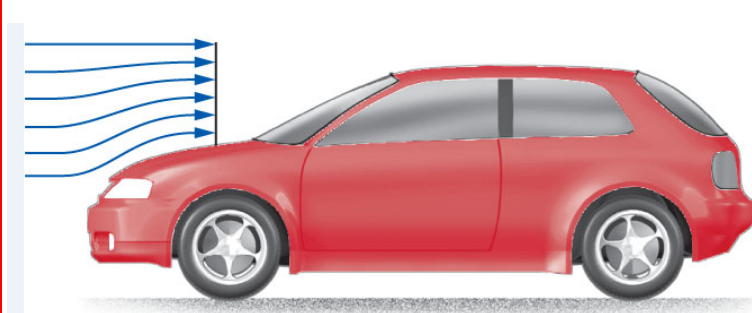


Today, we will:

- Continue talking about classifications of fluid flow
- Quick review of dimensions, units, unit conversions, and significant digits
- Begin Chapter 2 – Properties of Fluids

B. Classification of Fluid Flows (continued)**1. Viscous vs. inviscid regions of flow****2. Internal vs. external flow****Internal****External**

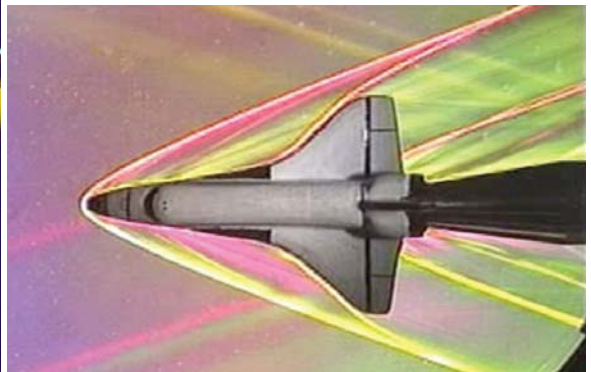
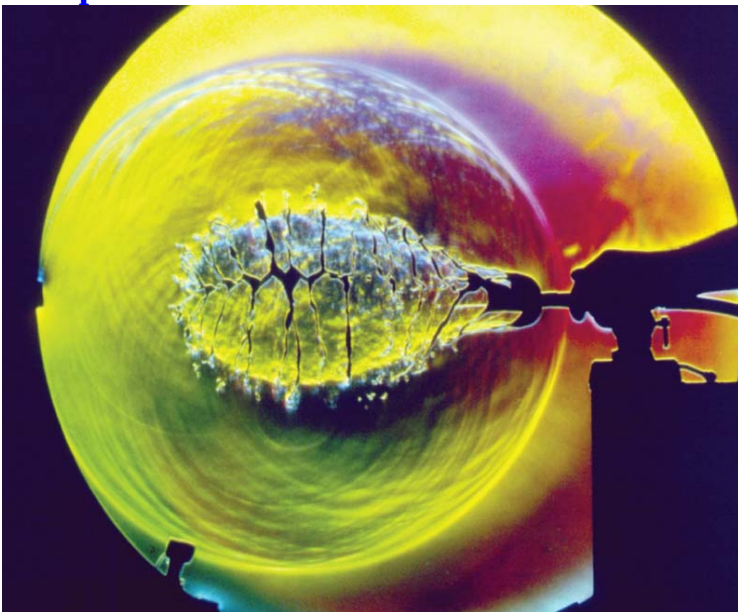
B. Classification of Fluid Flows (continued)

3. Compressible vs. incompressible flow

Incompressible



Compressible



B. Classification of Fluid Flows (continued)

4. Laminar vs. turbulent flow



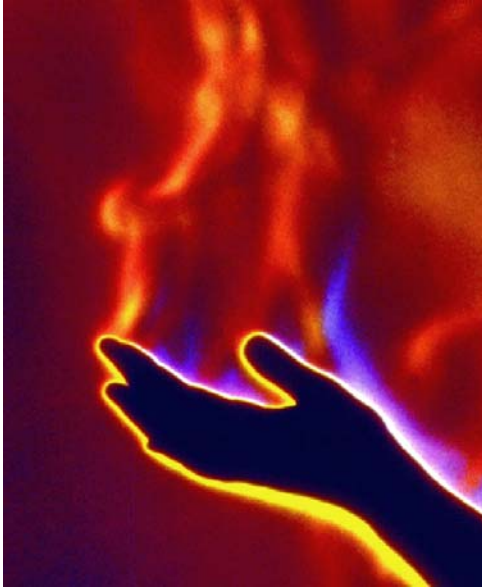
Laminar flow



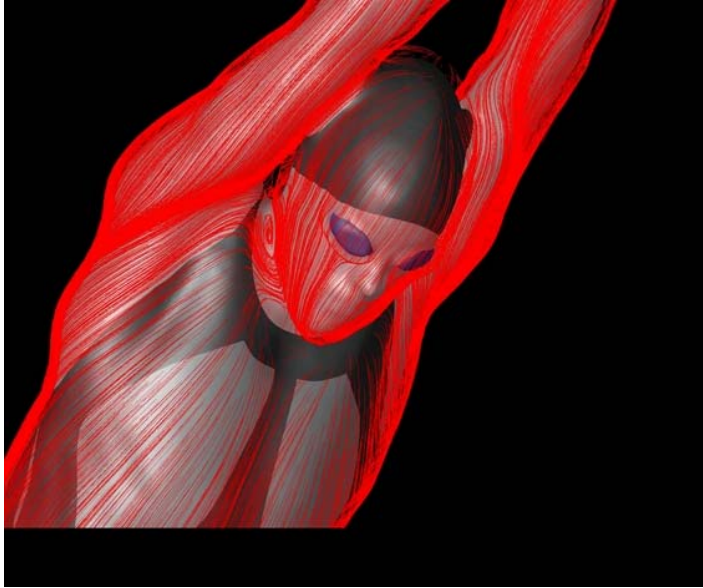
Turbulent flow

B. Classification of Fluid Flows (continued)

5. Natural vs. forced flow



Natural



Forced

6. Steady vs. unsteady



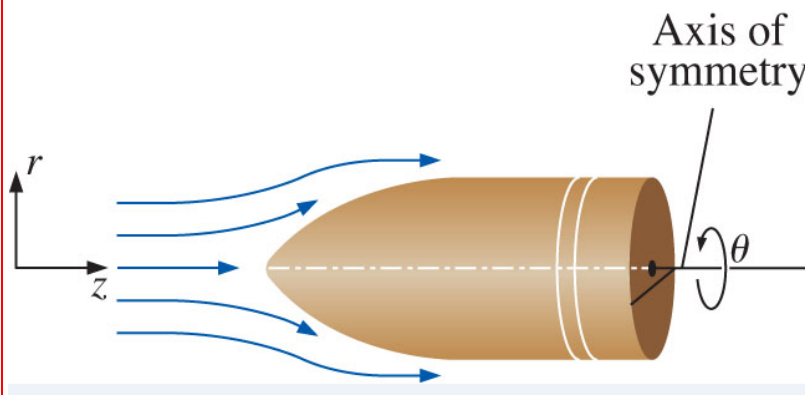
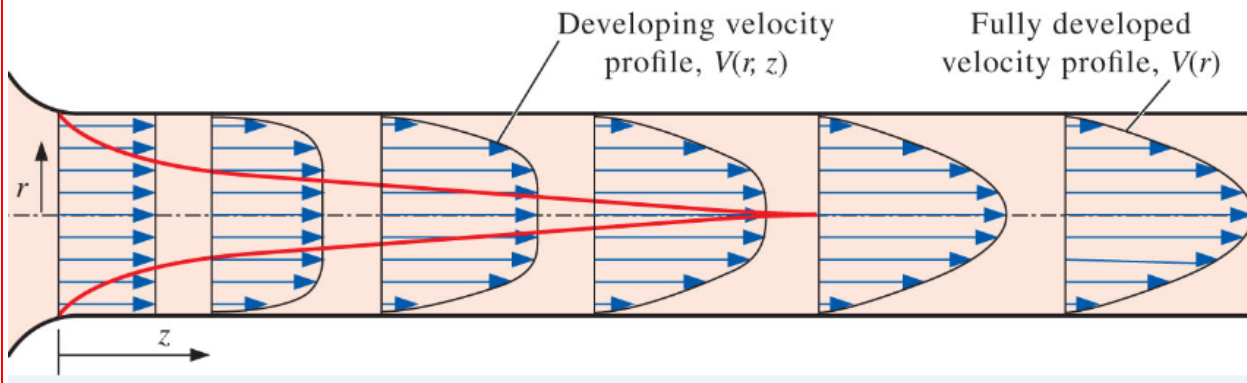
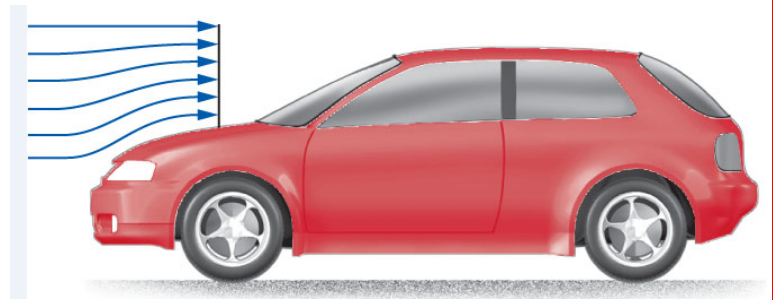
Steady in the mean



Unsteady instantaneously

B. Classification of Fluid Flows (continued)

7. One-, two-, or three-dimensional



C. Dimensions, Units, and Significant Digits

1. Dimension =

2. Unit =

3. Unit conversions, unity conversion ratios

Example: Unit conversions

Given: The mass of an object is $m = 2.00$ kg.

To do: How much does this mass weigh on earth in units of lbf?

Solution:

C. Dimensions, Units, and Significant Digits (continued)

4. Significant digits

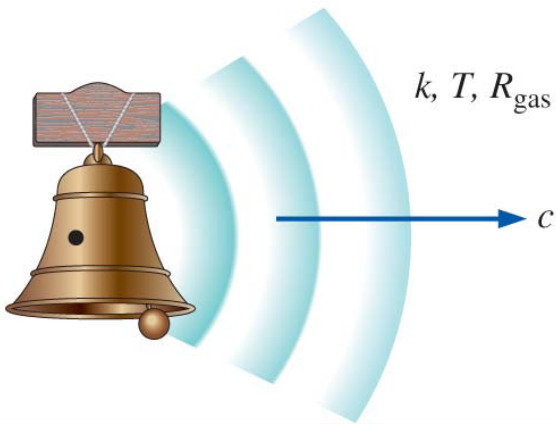
D. Properties of Fluids (Chapter 2)

1. Kinematic properties

2. Thermodynamic properties

3. Other (miscellaneous) properties

a. speed of sound



D. Properties of Fluids (continued)

b. vapor pressure, P_v