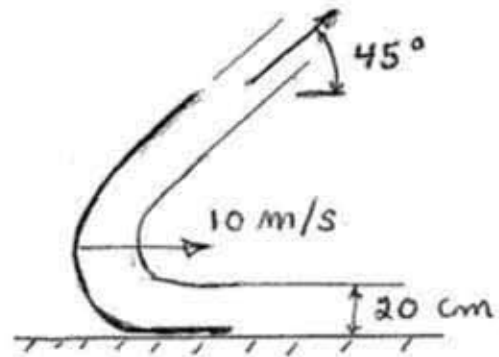


Basic Laws for Finite Systems - 2

3.4 A snow plow is moving at constant speed of 10 m/s plowing 20 cm deep snow whose specific gravity is 0.15. What is the force to move the blade?



3.5 Find the force necessary to hold the entry length of pipe. The flow enters the pipe with a uniform velocity profile and becomes parabolic, $u = 2\bar{u}(1 - r^2/R^2)$, at section 2. The flow rate of water is $\dot{q} = 2 \times 10^{-4} \text{ m}^3/\text{s}$ and the diameter is 1.0 cm. The pressure drop is $p_1 - p_2 = 1.5 \rho V_1^2$.

