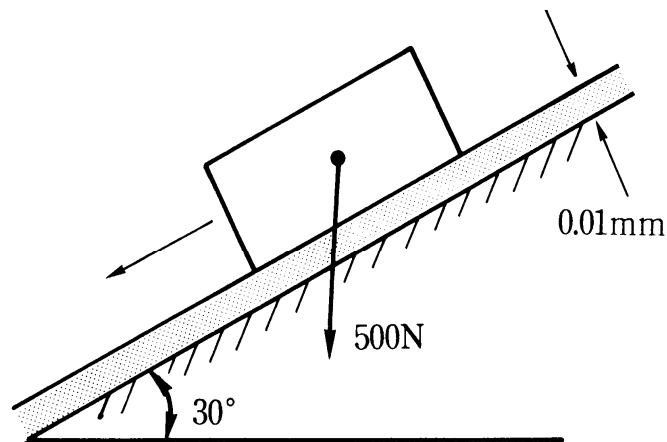
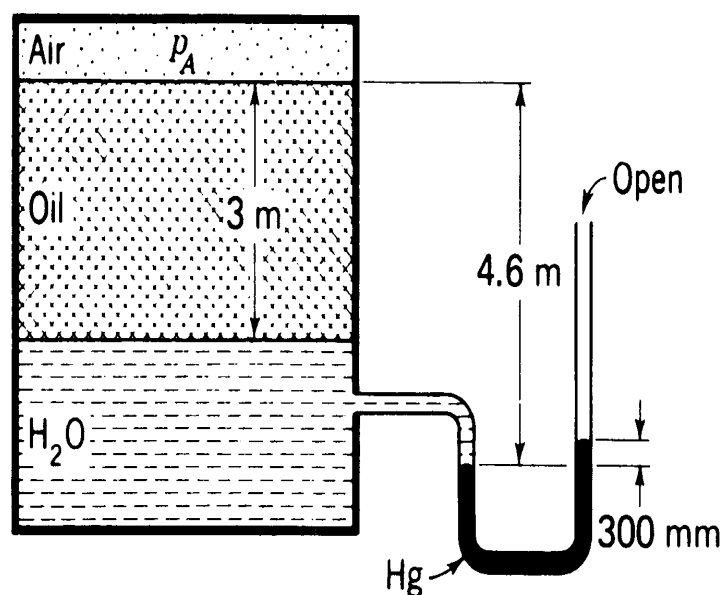


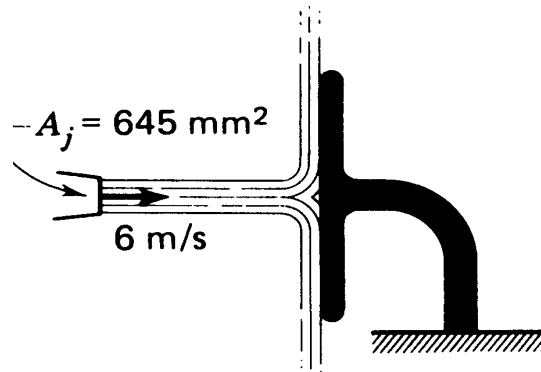
1. The basic system of dimensions would then be mass ( $M$ ), length ( $L$ ) and time ( $T$ ). What is the dimensional representation of (a) Pressure (b) Absolute viscosity (c) Work (d) Force.
2. A block weighting 500 N and having area  $0.36 \text{ m}^2$  to slide down an incline on a film of oil having a thickness of  $0.01 \text{ mm}$ . If we use a linear velocity profile in the oil, what is the terminal speed of the block? The viscosity of the oil is  $5 \times 10^{-3} \text{ N.s / m}^2$ .



3. The specific gravity of the oil is  $0.8$ . What is the pressure  $p_A$ ?



4. A jet of water issues from a nozzle at a speed of 6 m/s and strikes a stationary flat plate oriented normal to the jet. The exit area of the nozzle is 645 mm<sup>2</sup>. What is the total horizontal force on the plate from the fluids in contact with it?



5. What is the force on the elbow-nozzle assembly from the water and air? The water issues out as a free jet from the nozzle. The interior volume of the nozzle elbow assembly is 0.1 m<sup>3</sup>.

