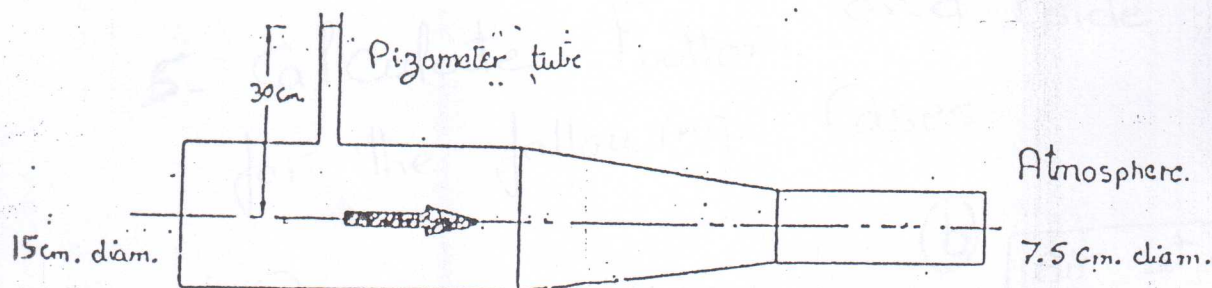


Sheet #3: Flow of Incompressible Fluids

- 1- Two horizontal circular discs 30cm diameters each are 1cm apart. Water enters at the center of one disc & flows outwards discharging into atmosphere at the outer diameter with a velocity of 20cm/sec. Calculate the pressure head between the two discs at a radius 5cm. (Assume ideal flow) ($h = -1.63$ cm water)
- 2- The diameter of a pipe changes from 20cm at a section 5m above datum, to 5cm at a section 3m above datum. The pressure of water first section is 5 bar. If the velocity of flow at the first section is 1m/s, determine the pressure at the second section, assuming ideal flow... ($P = 3.9$ bar)
- 3- Calculate the discharge in lit/sec. through the pipe line show below.



Also draw the T.E.L & H.G., considering ideal flow.

A pipe 4 cm diameter is connected in series to a pipe 8 cm diameter, for a discharge of 6 lit/sec, of a liquid of sp. gr. 0.9. The pressure before and after the sudden enlargement were to be 2 bar and 2.04 bar.

Calculate the head lost in the enlargement
(soln $h = 0.64$ m of liq.)

5. Calculate F_{bottom} and F_{side} for the following cases.

