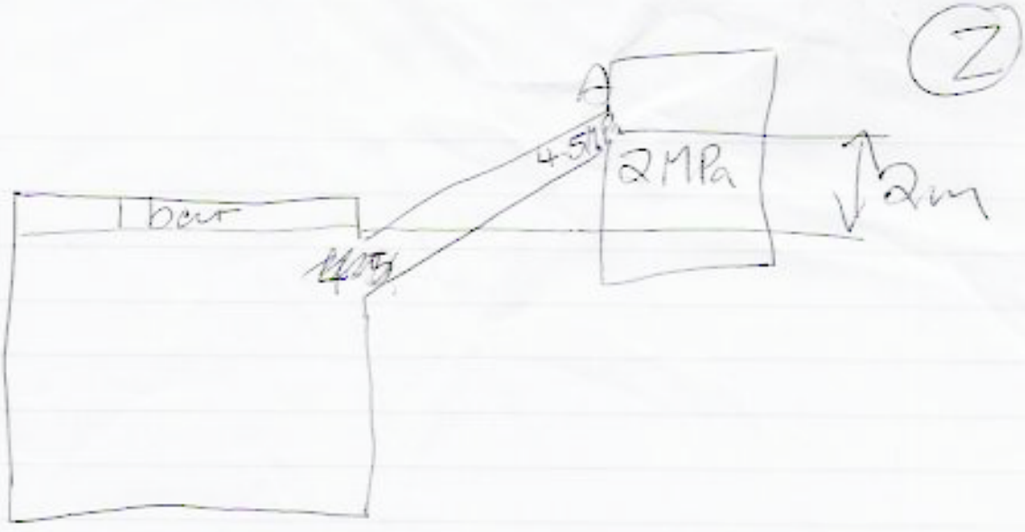
2)



(2)

a) $P + \frac{\rho v^2}{2} + \rho g h = C$

10 At point A take h = 0

$4 \cdot 5 \times 10^6 + 790 \times 0^2 = 2 \cdot 5 \times 10^6 + \frac{790}{2} v^2$

$v^2 = \frac{2 \cdot 5 \times 2 \times 10^6}{790} = 79 \cdot 56 \text{ m/s}$

b) $P = mgh = 740 \times \pi \times (0.005)^2 \times 79 \cdot 56 \times 2$

$= 9 \cdot 87 \text{ W}$

c) $\pi r^2 V = \pi (0.005)^2 \times 79.56$

where $r = 0.25$

$V = 1 \cdot 989 \times 10^{-3} \text{ m}$