$u = -0.3y^2 + 12y$

$\frac{du}{dy} = -0.6y + 12$

$\left(\frac{du}{dy}\right)_{at\ y=0} = 12$ $\left(\frac{du}{dy}\right)_{at\ 20} = 0$

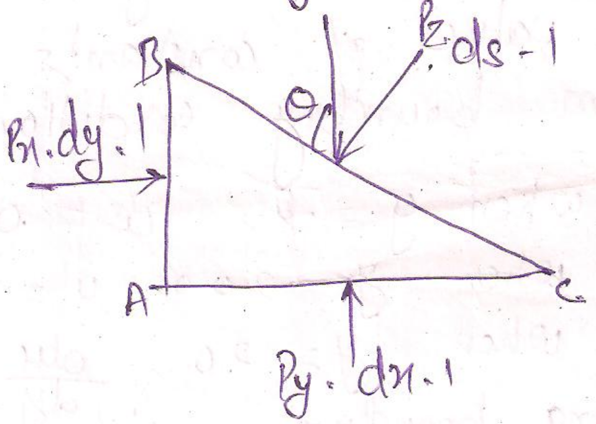
$(\ ''\ )_{at\ y=10} = 6,$

$\tau = \mu \frac{du}{dy}$ τ can be calculated for above threes

* Pascal's Law :— It states that the pressure or intensity of pressure at a point in a static fluid is equal in all directions. let the element is very small dimensions dx, dy and dz.

let the width of the element is ~~very smal~~ $\perp$ to the plane of paper is unity.

P_x, P_y & P_z are intensities of pressure at AB, AC & BC



Forces acting on the faces

Force on face AB
$= P_x \cdot dy \cdot 1$

Force on face AC
$= P_y \cdot dx \cdot 1$

~~Similarly~~ on BC $= P_z \cdot ds \cdot 1$

Weight of element $=$ mass $\times g =$ volume $\times \rho \times g$
$= \frac{AB \times AC}{2} \times \rho \times g.$

Resolving the forces in x- direction

$P_x\ dy \cdot 1 - P_z (ds \times 1) \sin(90 - \theta) = 0$

$P_x\ dy \cdot 1 - P_z\ ds \cos\theta = 0$

$ds \cos\theta = AB = dy.$

$P_x \cdot dy = P_z\ dy \Rightarrow \therefore P_x = P_z.$

Resolving in vertical direction

$P_y \cdot dx \cdot 1 - P_z\ ds \cdot 1 \cos(90 - \theta) - \frac{dx \times dy}{2} \times \rho \times g = 0$