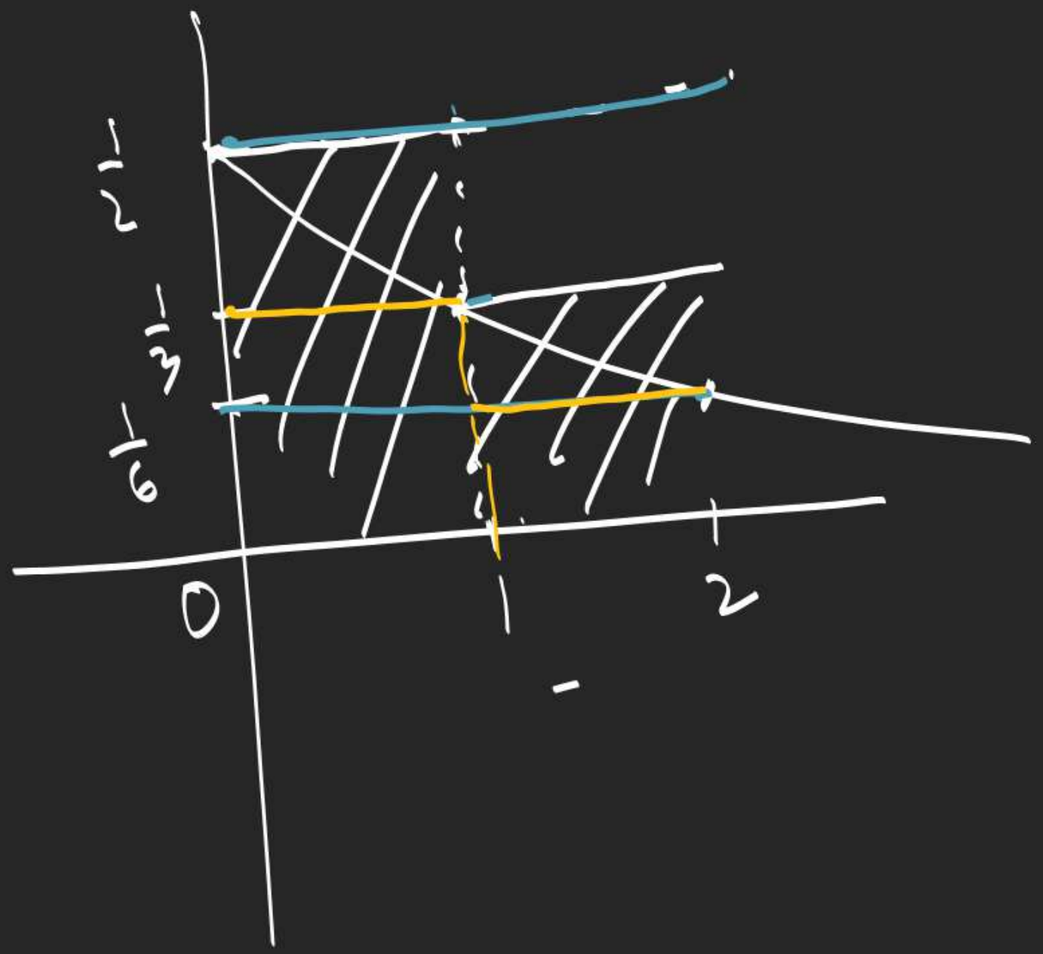
Nishant Jindal



Nishant Jindal

1: $\log_x(\log_y x) > 0 = \log_x 1$, $\frac{1}{2} < x < 2$.

$\frac{1}{2} < x < 1$

$\log_y 1 = 0 < \log_y x < 1 = \log_y y$

$0 < y < 1$

$1 > x > y$

$y < x < 1$

$y - x < 0$

$y > 1$

$1 < x < y$

$\log_y x > 1 = \log_y y$

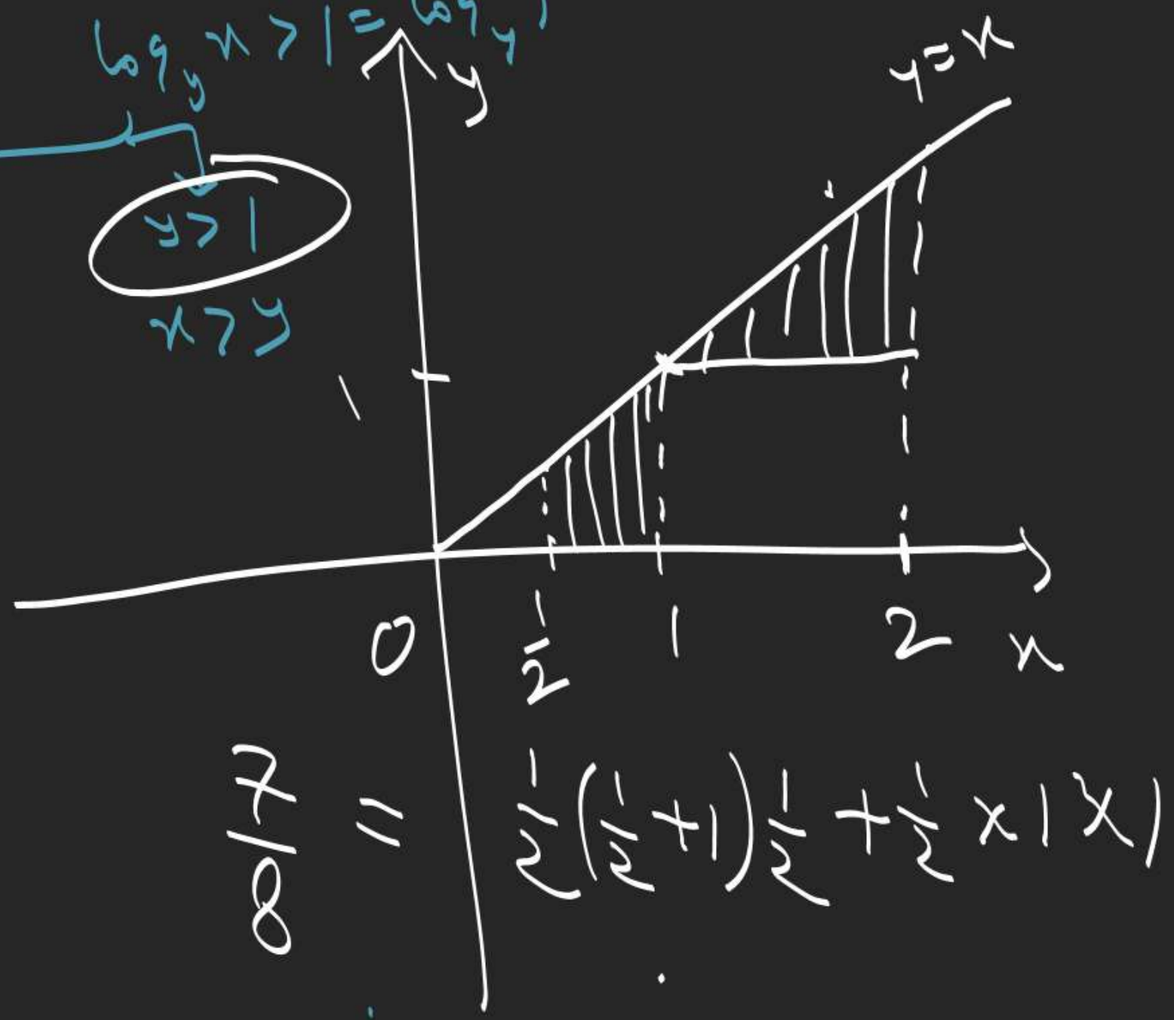
$0 < y < 1$

$x < y$

$y > 1$

$x > y$

$1 < x < 2$.



$\frac{0}{\infty} =$

$\frac{1}{2}\left(\frac{1}{2}+1\right)\frac{1}{2} + \frac{1}{2} \times 1 \times 1$

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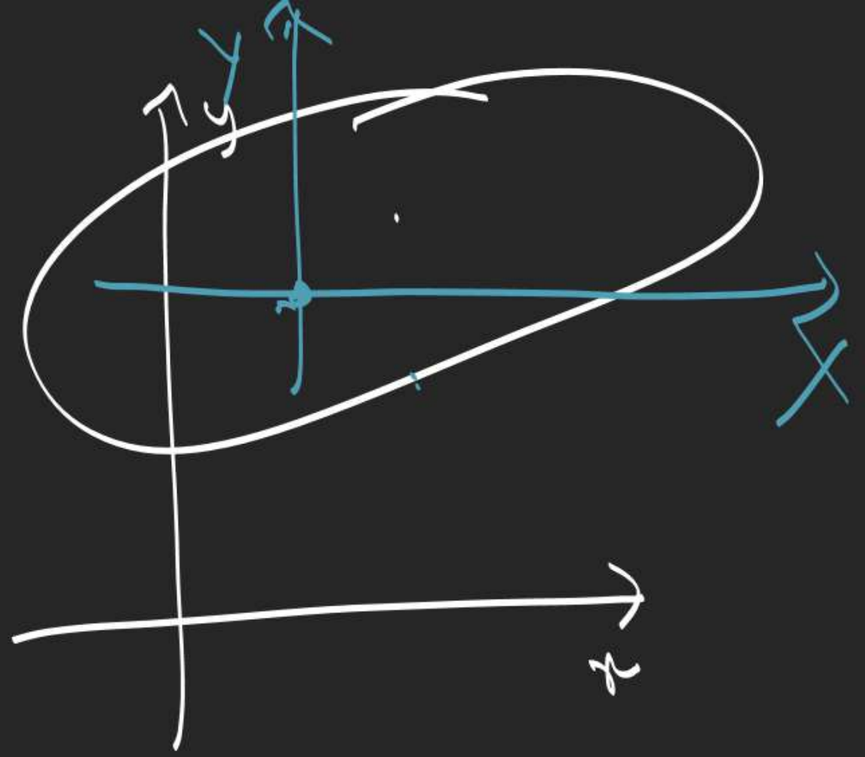


Nishant Jindal

1: Find the area enclosed by $(y-2)^2 = x-1$ and the tangent to it at $(2,3)$ and x-axis.

$y-2=Y$, $x-1=X$

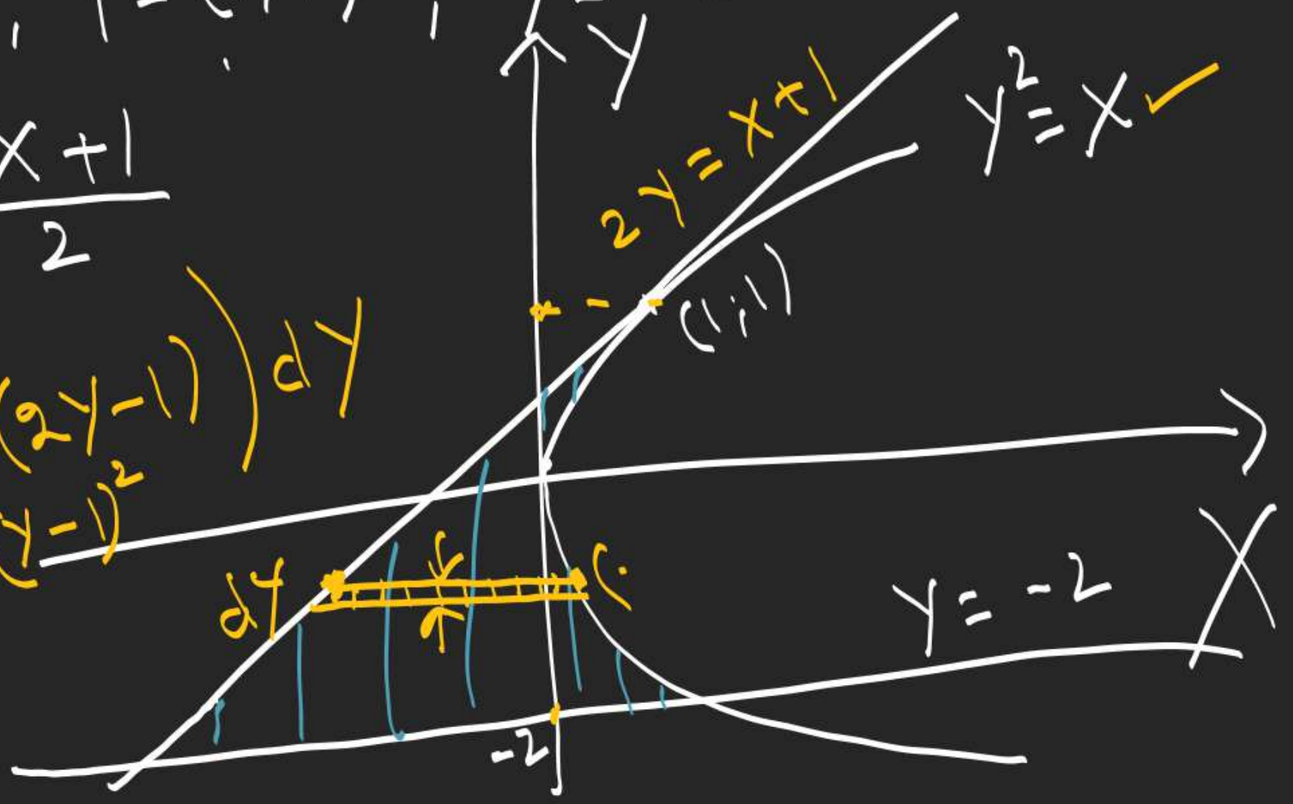
$y=0$

$Y^2 = X$, $P=(1,1)$, $Y=-2$

$Y(1) = \frac{X+1}{2}$

$$A = \int_{-3}^{0} y^2\,dy = \int_{-2}^{1} \left(y^2 - (2y-1)\right) dy$$

$(y-1)^2$



2: Find the area enclosed between the smaller arc of circle $x^2+y^2-2x+4y-11=0$ and the parabola $y=-x^2+2x+1-2\sqrt{3}$.