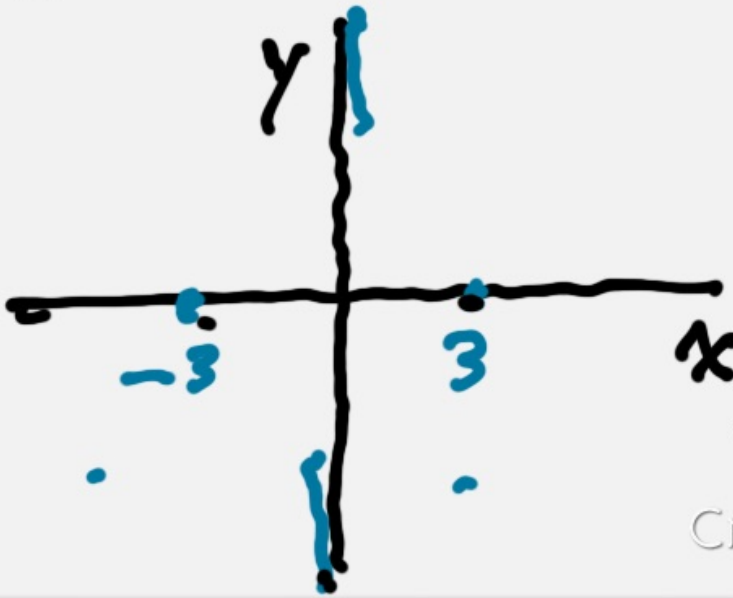
iam at 5060

$$y = \frac{(x-3)^2(x+3)^2}{x} \qquad \frac{(x^2-9)^2}{x}$$

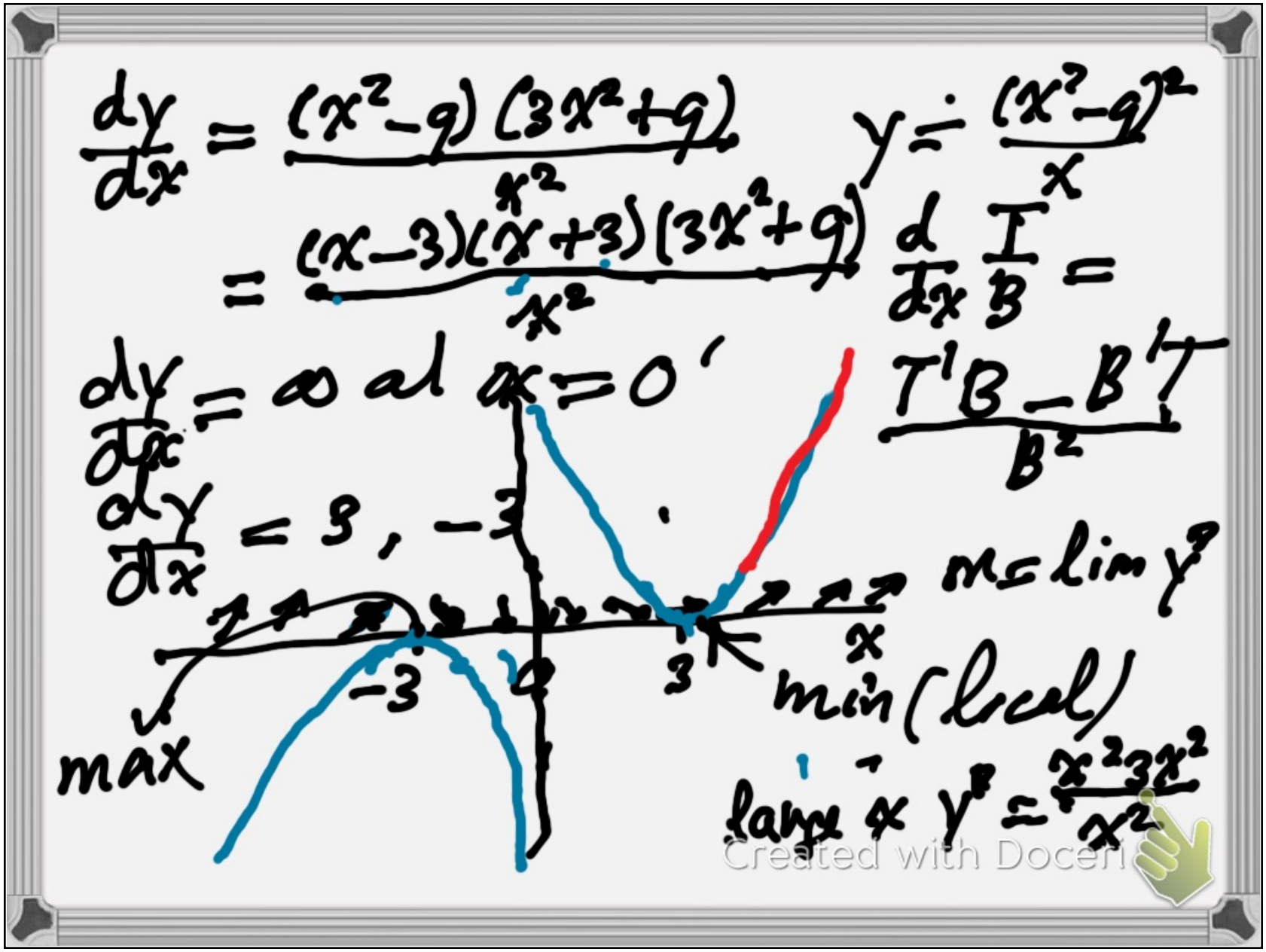
x-intercepts $x = \pm 3$ odd V.A.

and $x=0$ no H.A, O.A $y \sim x^3$



x-extends all except $x=0$

y-extend all y


dy/dx = (x²−9)(3x²+9) / x²
= (x−3)(x+3)(3x²+9) / x²
y = (x²−9)² / x
d/dx (T/B) =
(T'B − BT') / B²
dy/dx = ∞ at x = 0
dy/dx = 3, −3
−3
3
x
max
min (local)
m = lim y'
large x y' = x³ 3x² / x²
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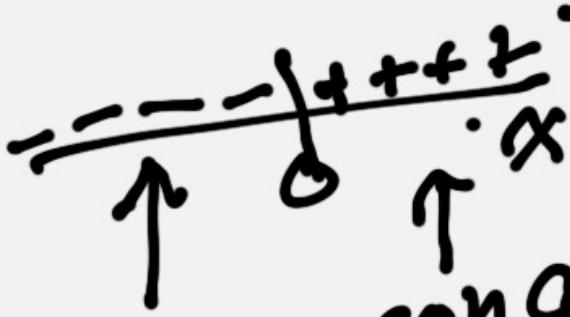
$y'' = \frac{6x^4 + 162}{x^3}$

large x: $6x$

y'' is $\underline{\quad\quad}$



concave down · concave up

asked $y = x\sqrt{x-1}$

$x \geq 1$

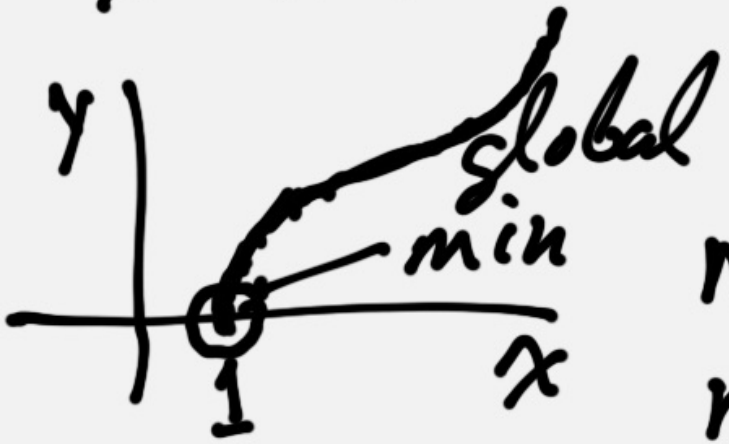
Look at y:

x - extend: $x \geq 1$

large x: $y \sim x^{3/2}$

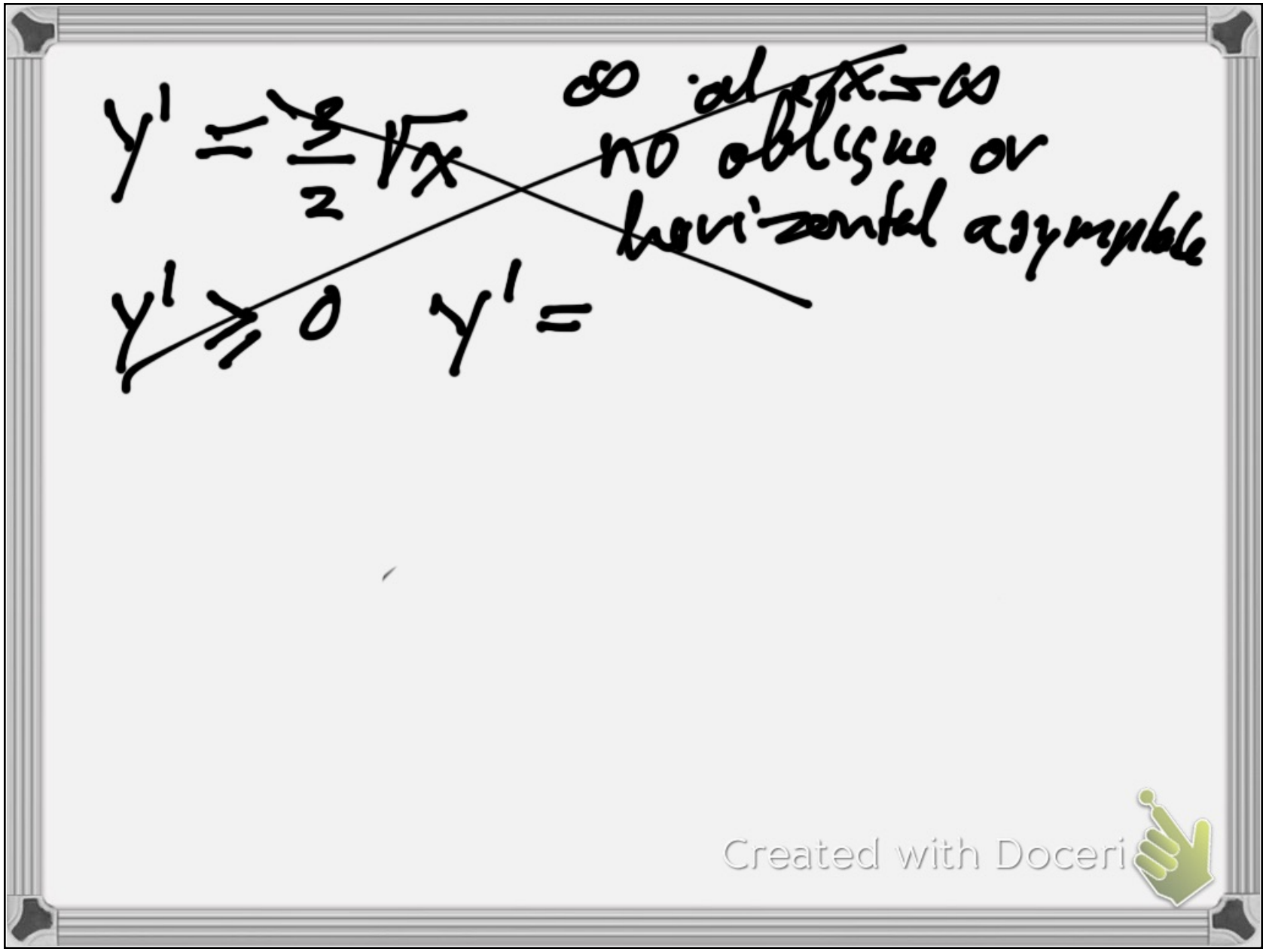
near $x = 1$

$y \sim \sqrt{x-1}$



no V.A. no H.A.

no O.A.


$y' = \frac{3}{2}\sqrt{x}$
∞ at $x = \infty$
no oblique or
horizontal asymptote
$y' \geq 0$
$y' =$
Created with Doceri

$$y' = \frac{3x-2}{2\sqrt{x-1}} \longrightarrow \geq 1 \longrightarrow \geq 0$$

$\rightarrow y \geq 0$ monotonously increasing

$y'' = \frac{2x-4}{4(x-1)^{3/2}} \rightarrow y'' = 0$

$\text{ad } x = \frac{4}{3}$

↓

in flection

$\text{ad } x\,\frac{4}{3}$

$y = \ldots$