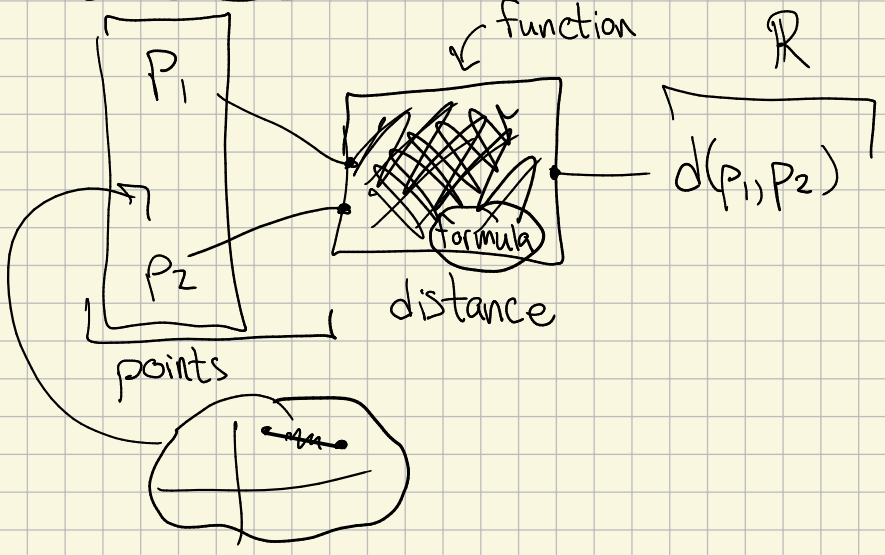
- $P_1 = (x_1, y_1)$, $P_2 (x_2, y_2)$



$$d(P_1, P_2) = d\big((x_1, y_1), (x_2, y_2)\big)$$

$$= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\left(\neq \sqrt{(x_2 - x_1)^2} + \sqrt{(y_2 - y_1)^2}\right)$$

- Point-slope formula

$P_1 = (x_1, y_1)$, m $\Big\}$ $y - y_1 = m(x - x_1)$

number

(eg $P_1 = (2, 3)$ $\rightarrow$ $y - 3 = m(x - 2)$?

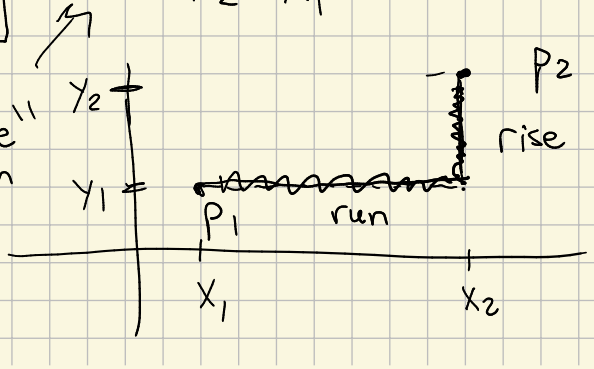
If you have a 2nd point

Say $P_2 = (x_2, y_2)$ then

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

What's the picture?

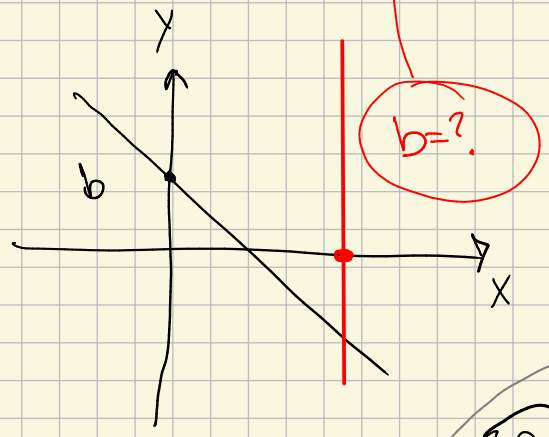
"$m = \frac{\text{rise}}{\text{run}}$"



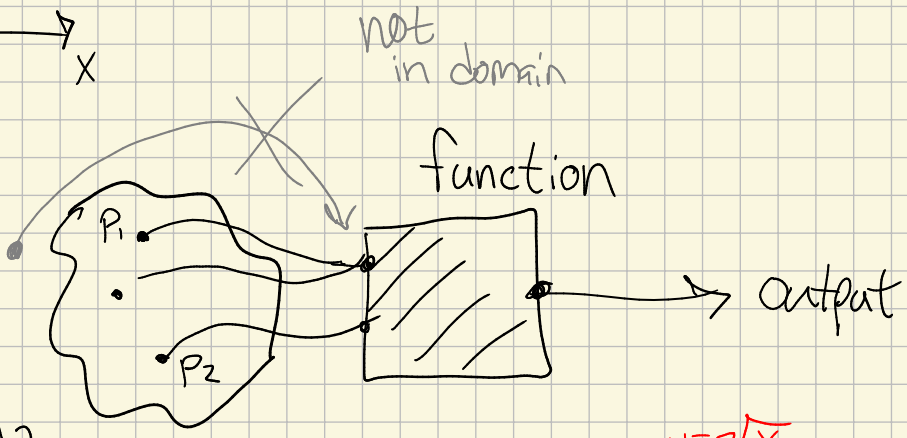
- Slope-intercept

$y = mx + b$

slope, y-intercept



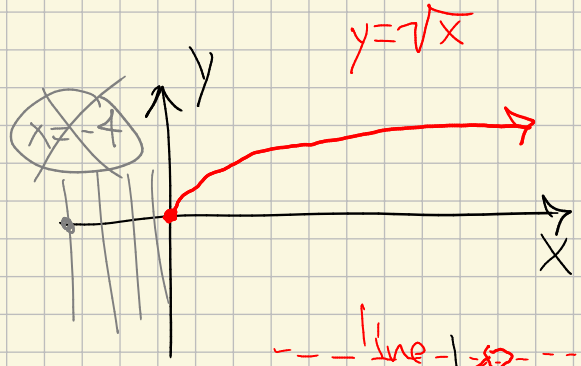
- Domain issues



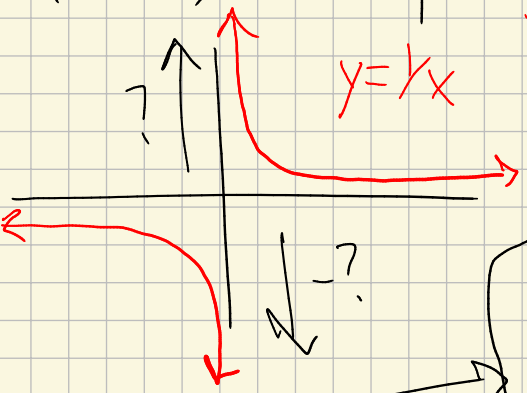
Where are certain functions undefined?

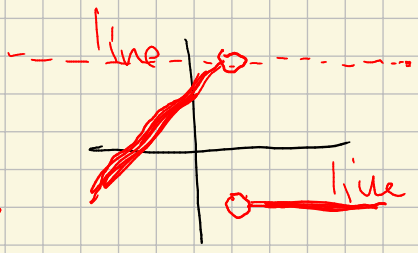
Domain

1) $\sqrt{x}$, $x < 0$



2) $1/x$, $x = 0$ ("$1/0$")





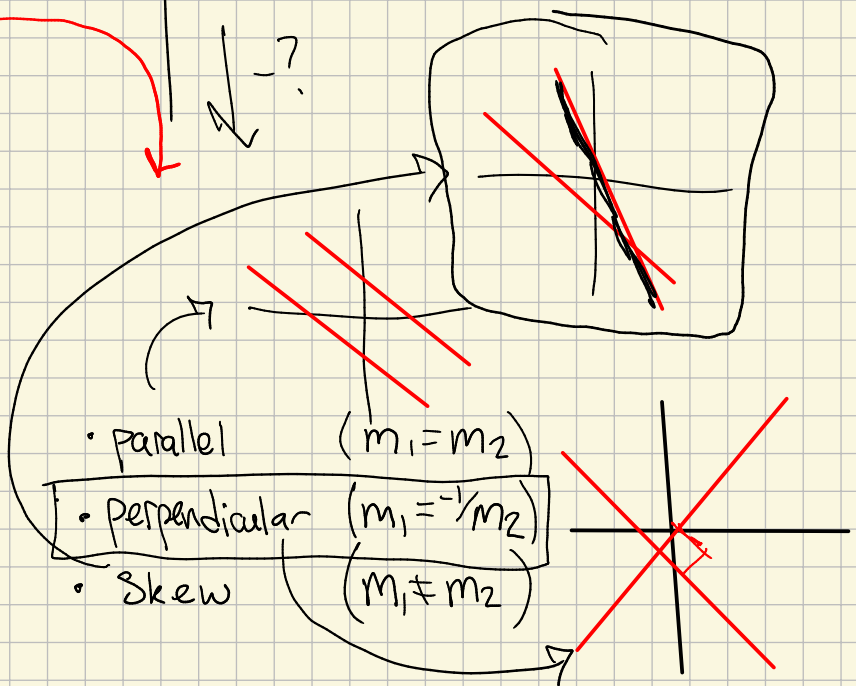
Later.

3) $\log(x)$, $x \leq 0$

- Parallel vs perpendicular

L_1: $y = x + b_1$

L_2: $y = m_2 x + b_2$



- Algebra Skills

$x = \ldots ?$

- $(y+5) + (x-100)^2 = 4$