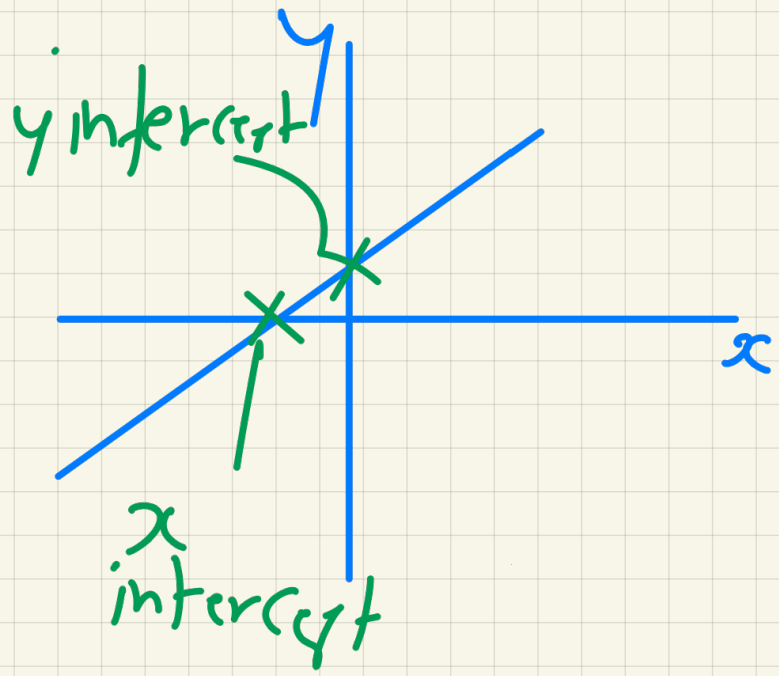
Function Graphs

Linear Graph



Equation: $y = mx + c$

slope — y-intercept

(Slope-Point Form)

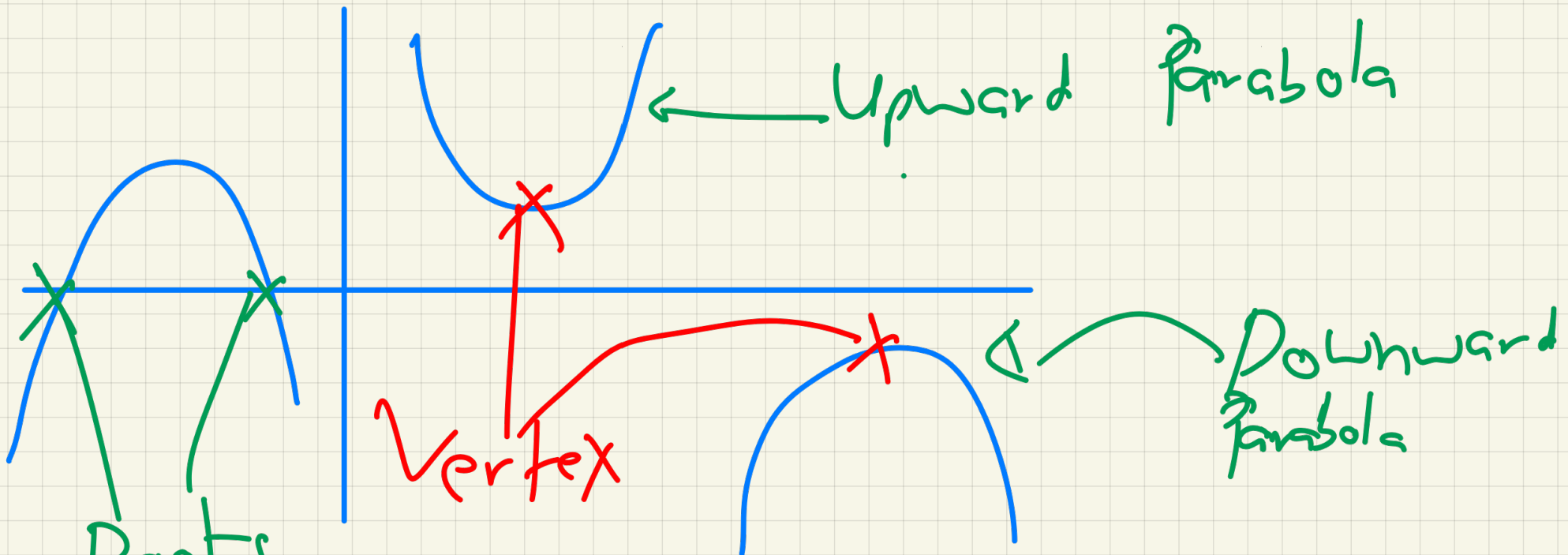
OR $y - y_1 = m(x - x_1)$

(x, y) → general variables

(x_1, y_1) → point

m - slope

Quadratic Graph



Roots

Intercepts

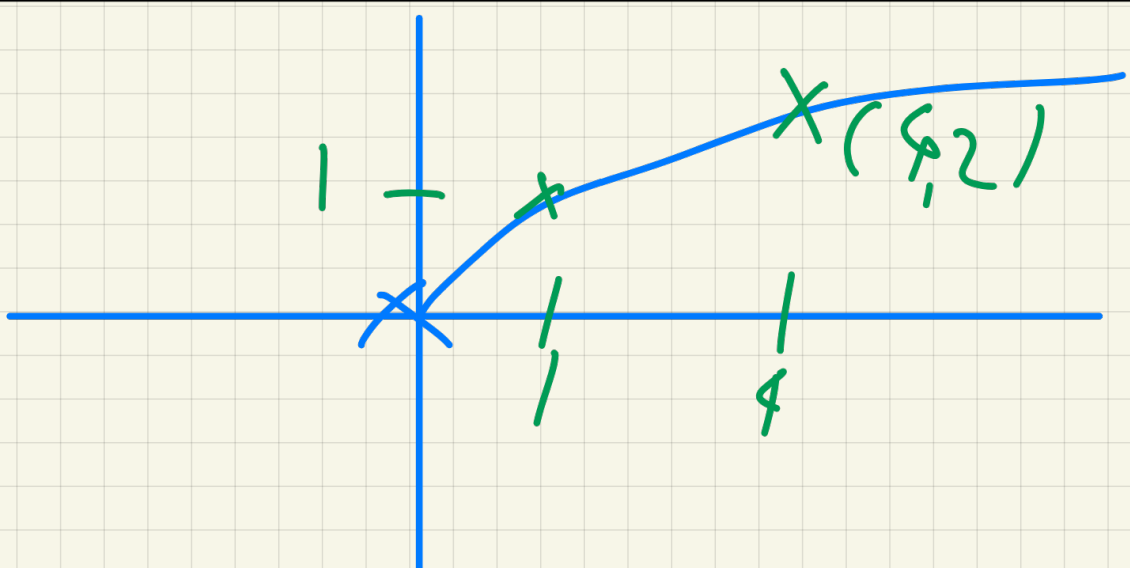
Zeros

Square Root Function

$\sqrt{4} = 2$ $\sqrt{0} = 0$

$\sqrt{16} = 4$ $\sqrt{1} = 1$

$\sqrt{25} = 5$



Parent function (Base Function)

Graphs of parent functions → Memorize

Linear → $y = x$

Quadratic → $y = x^2$

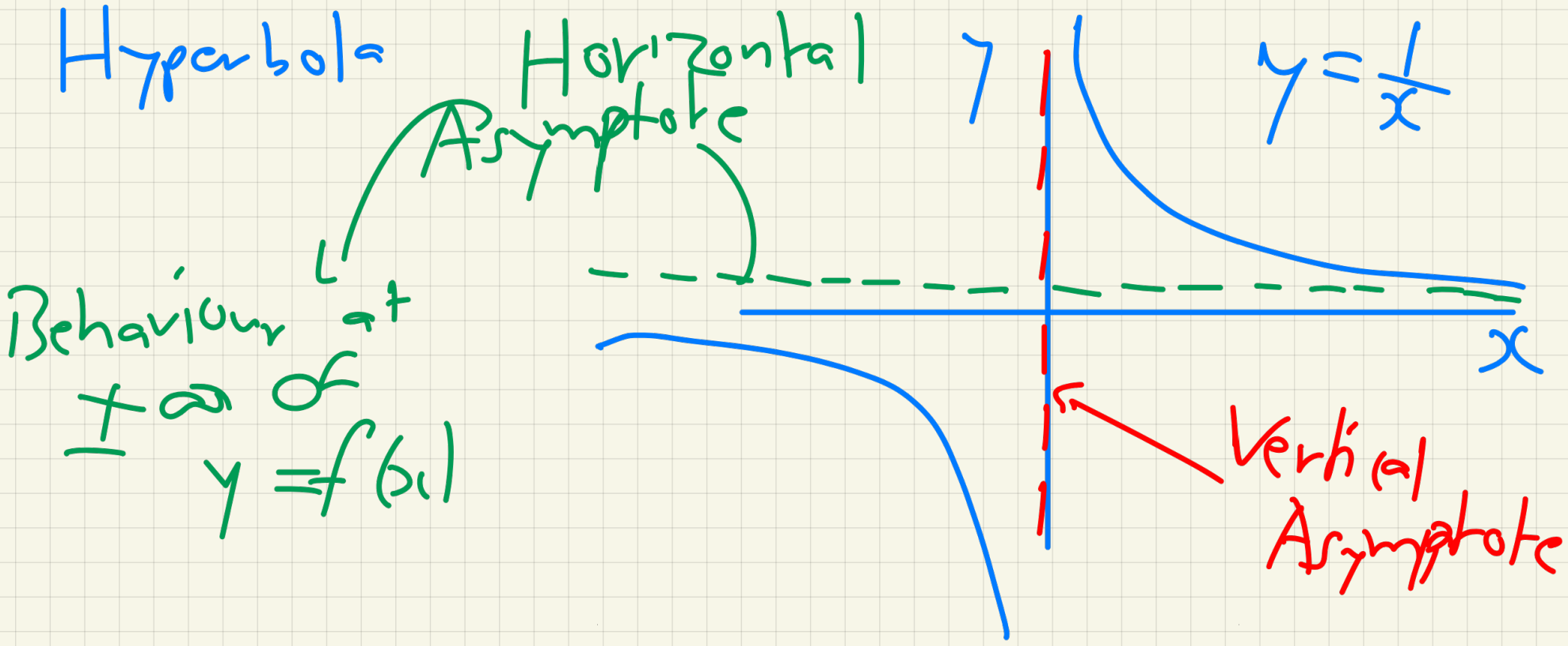
Square Root → $y = \sqrt{x}$

Hyperbola → $y = \frac{1}{x}$

Exponential → $y = e^x$

Logarithmic → $y = \ln x$

Hyperbola



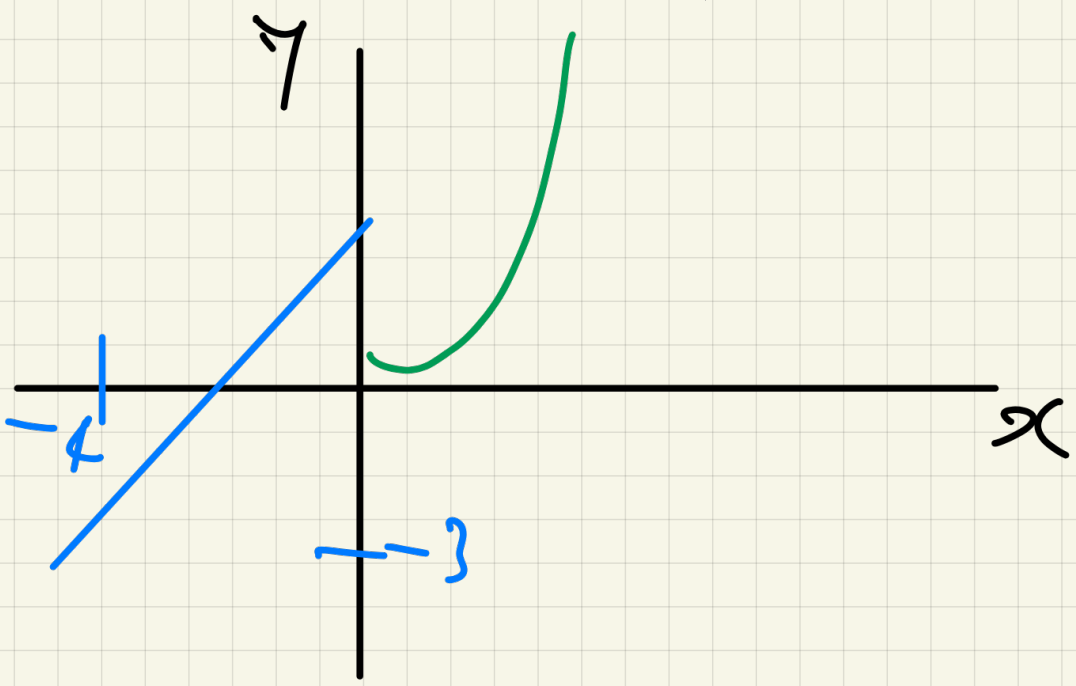
Behaviour at ±∞ of $y = f(x)$

- Piecewise Function

$$f(x) = \begin{cases} x+1, & -4 < x < 0 \\ x^2, & x \geq 0 \end{cases}$$

$-4 < x < 0$ → (Linear)

$x \geq 0$ → (Quadratic)


y
x
-4
-3