BOARD NOTES

11 SEPTEMBER 2019

2A.2 (A) graph the functions $f(x) = x^2$, $f(x) = \sqrt{x} = \sqrt[2]{x}$, $f(x) = {}^1/_x$, $f(x) = \sqrt[3]{x}$, $f(x) = x^3$, $f(x) = |x|$, $f(x) = b^x$, $f(x) = \log_b x$ where b is 2, 10, and e, and, when applicable, analyze the key attributes such as domain, range, intercepts, symmetries, asymptotic behavior, and maximum and minimum given an interval;

2A.2 (D) use the composition of two functions, including the necessary restrictions on the domain, to determine if the functions are inverses of each other;

2A.7 (I) write the domain and range of a function in interval notation, inequalities, and set notation.

We will be able to transform parent functions.

WHAT WE NEED:

- TI – 84

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVING THE

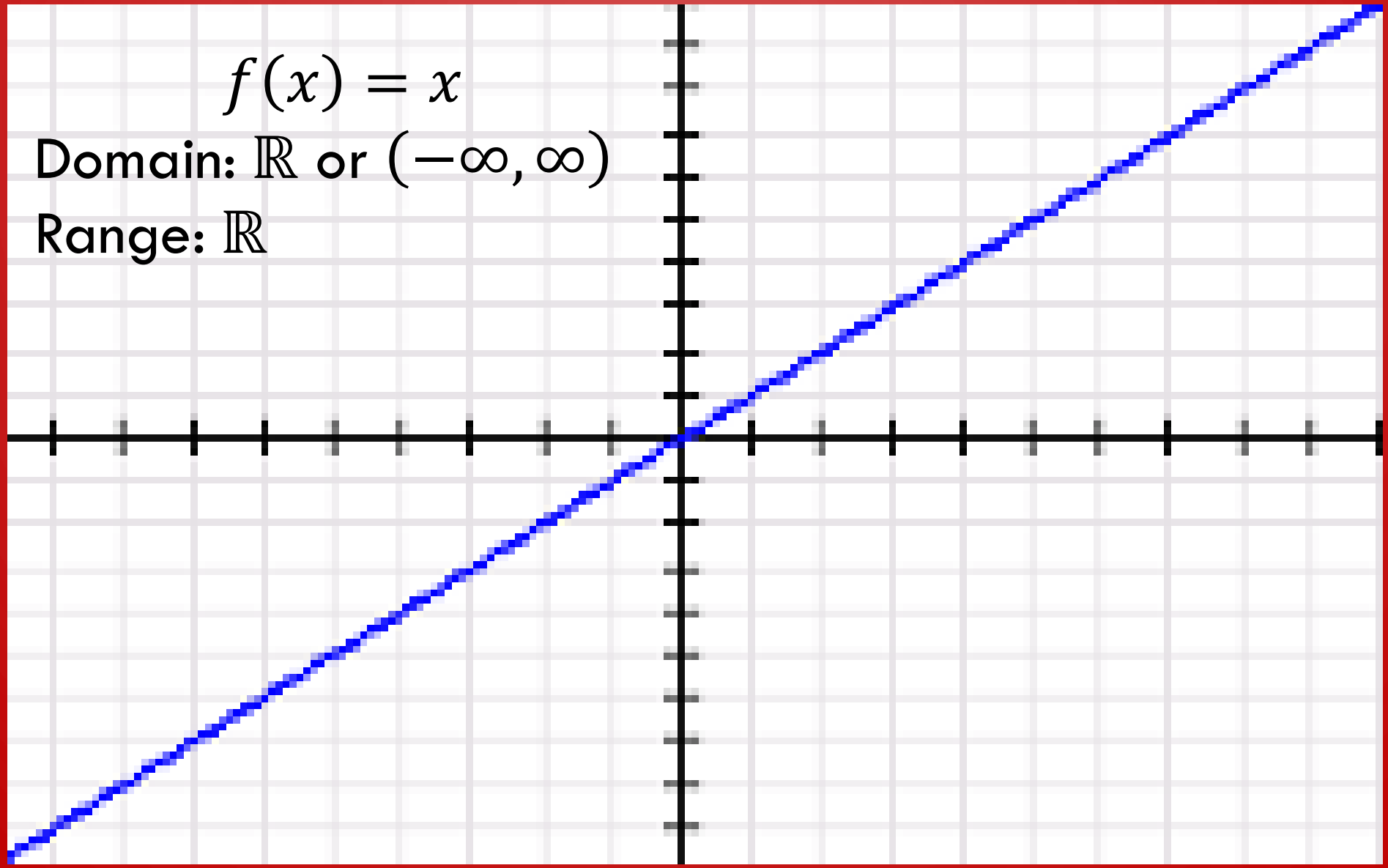
- Domain
- Range
- Intercepts (if any)
- Intervals of: Increasing / Decreasing / Constant
- Reflections
- Even / Odd / Neither
- Transformations

Linear Parent Function

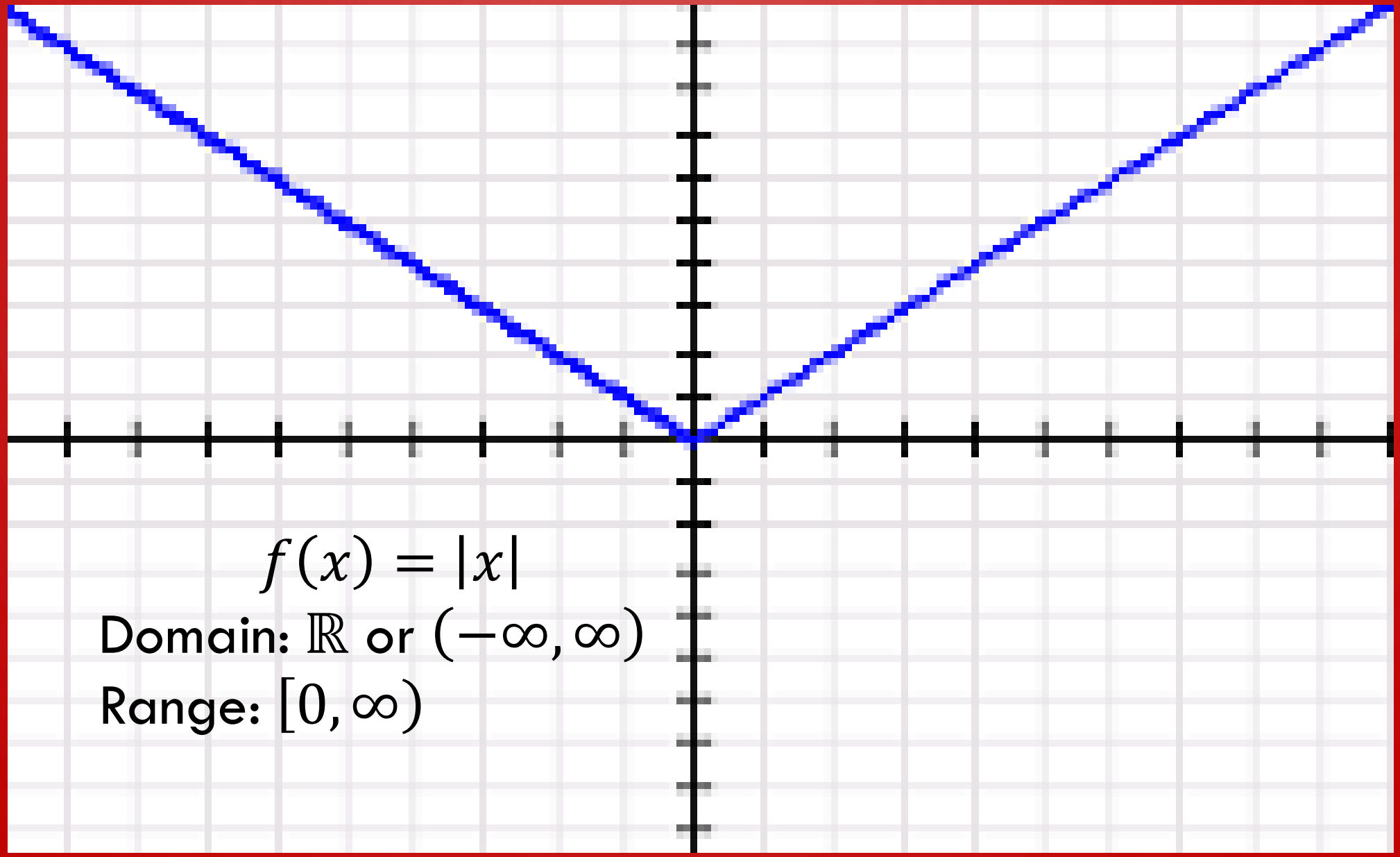
$f(x) = x$

Domain: $\mathbb{R}$ or $(-\infty, \infty)$

Range: $\mathbb{R}$



Absolute Value Parent Function



$$f(x) = |x|$$

Domain: $\mathbb{R}$ or $(-\infty, \infty)$

Range: $[0, \infty)$

Reciprocal or Rational Parent Function

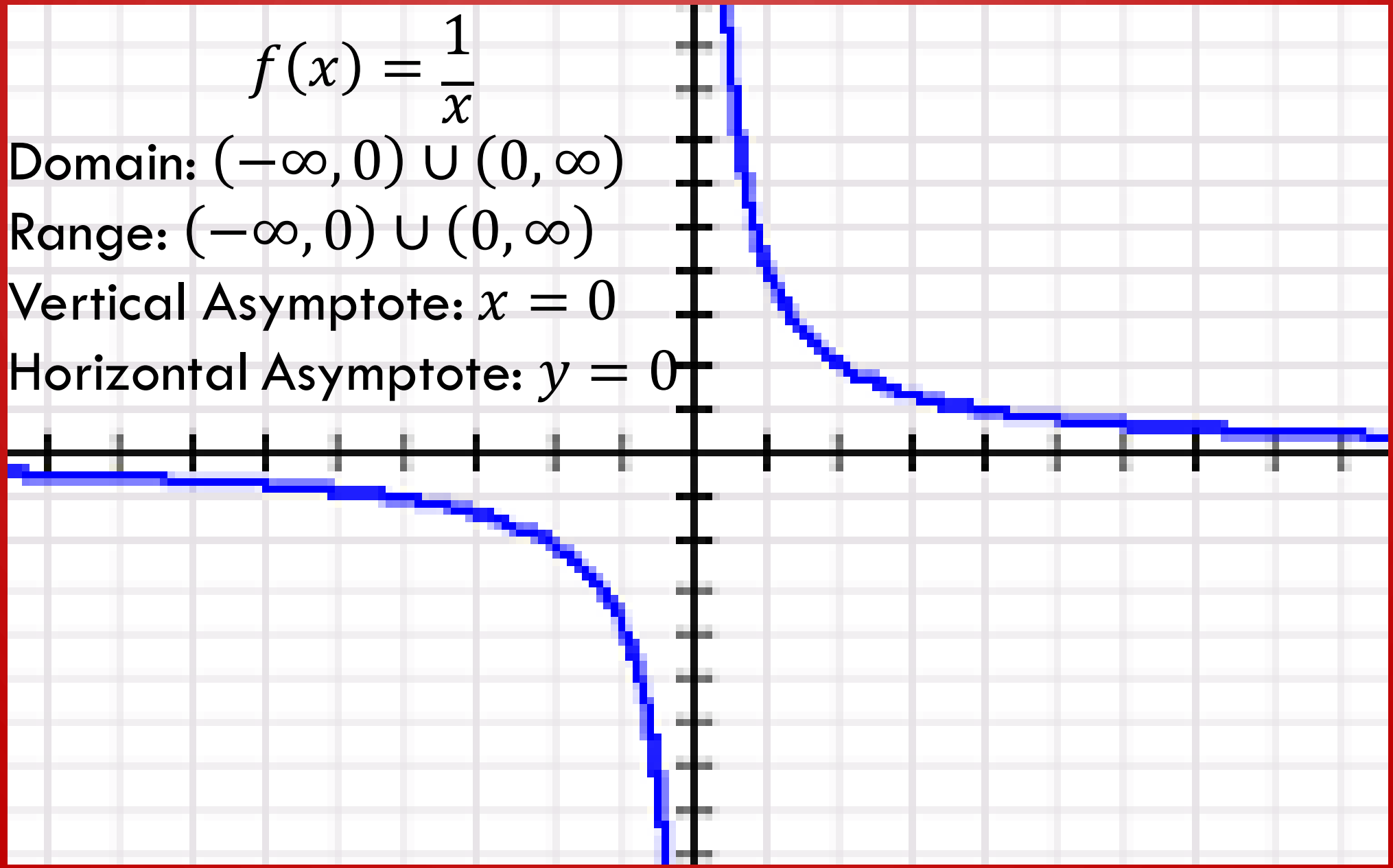
$$f(x) = \frac{1}{x}$$

Domain: $(-\infty, 0) \cup (0, \infty)$

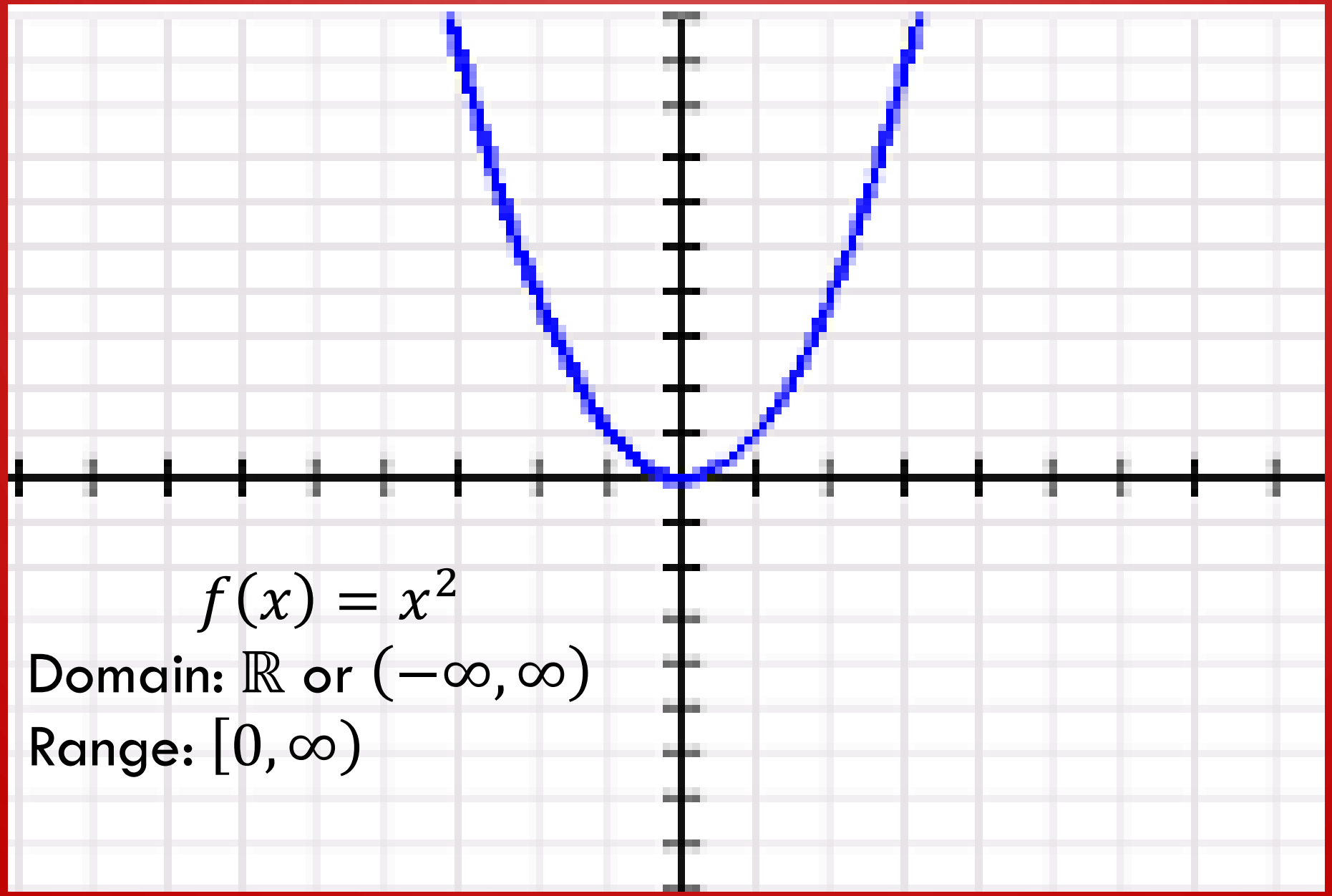
Range: $(-\infty, 0) \cup (0, \infty)$

Vertical Asymptote: $x = 0$

Horizontal Asymptote: $y = 0$



Quadratic Parent Function

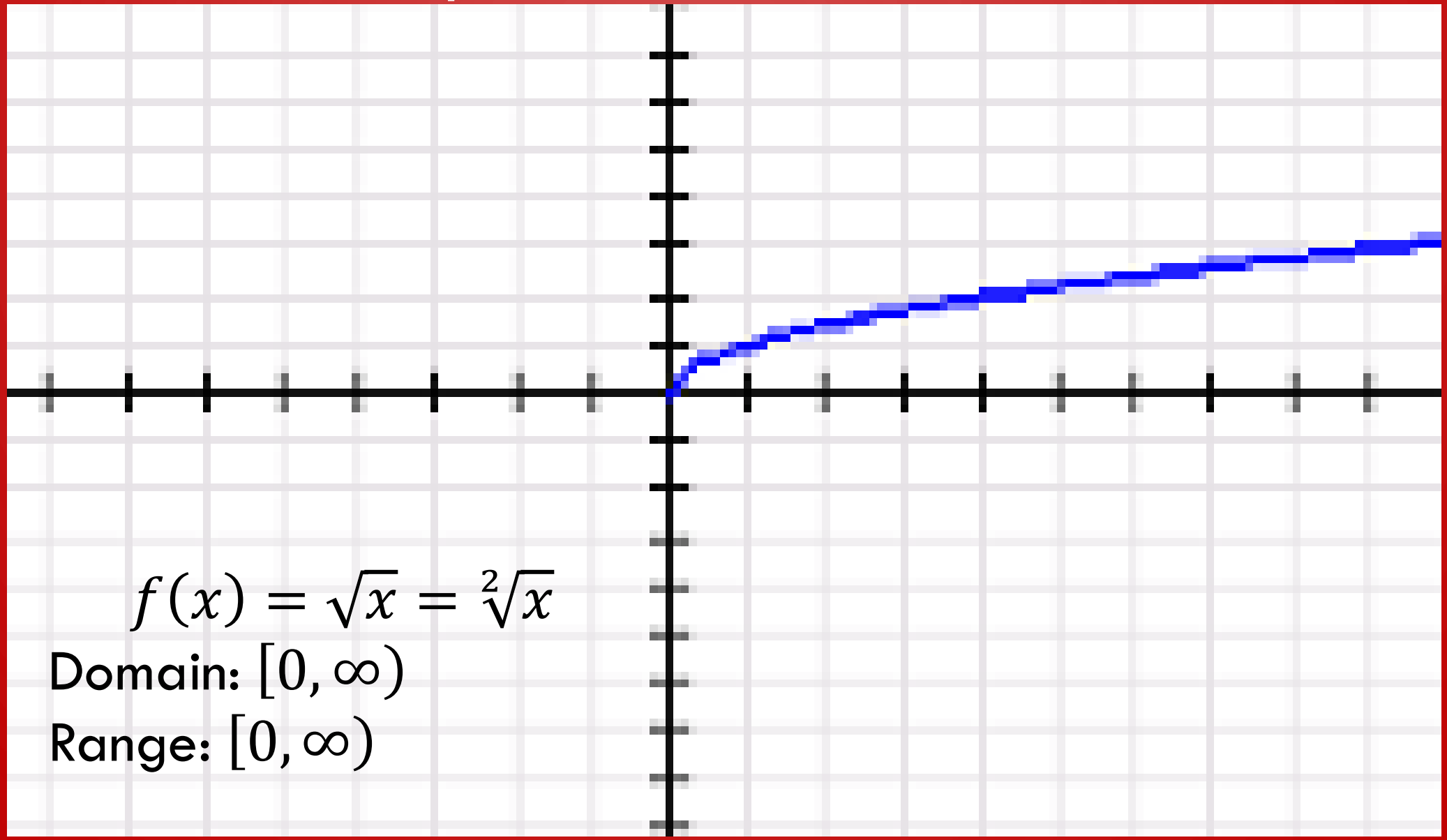


$f(x) = x^2$

Domain: $\mathbb{R}$ or $(-\infty, \infty)$

Range: $[0, \infty)$

Square Root Parent Function

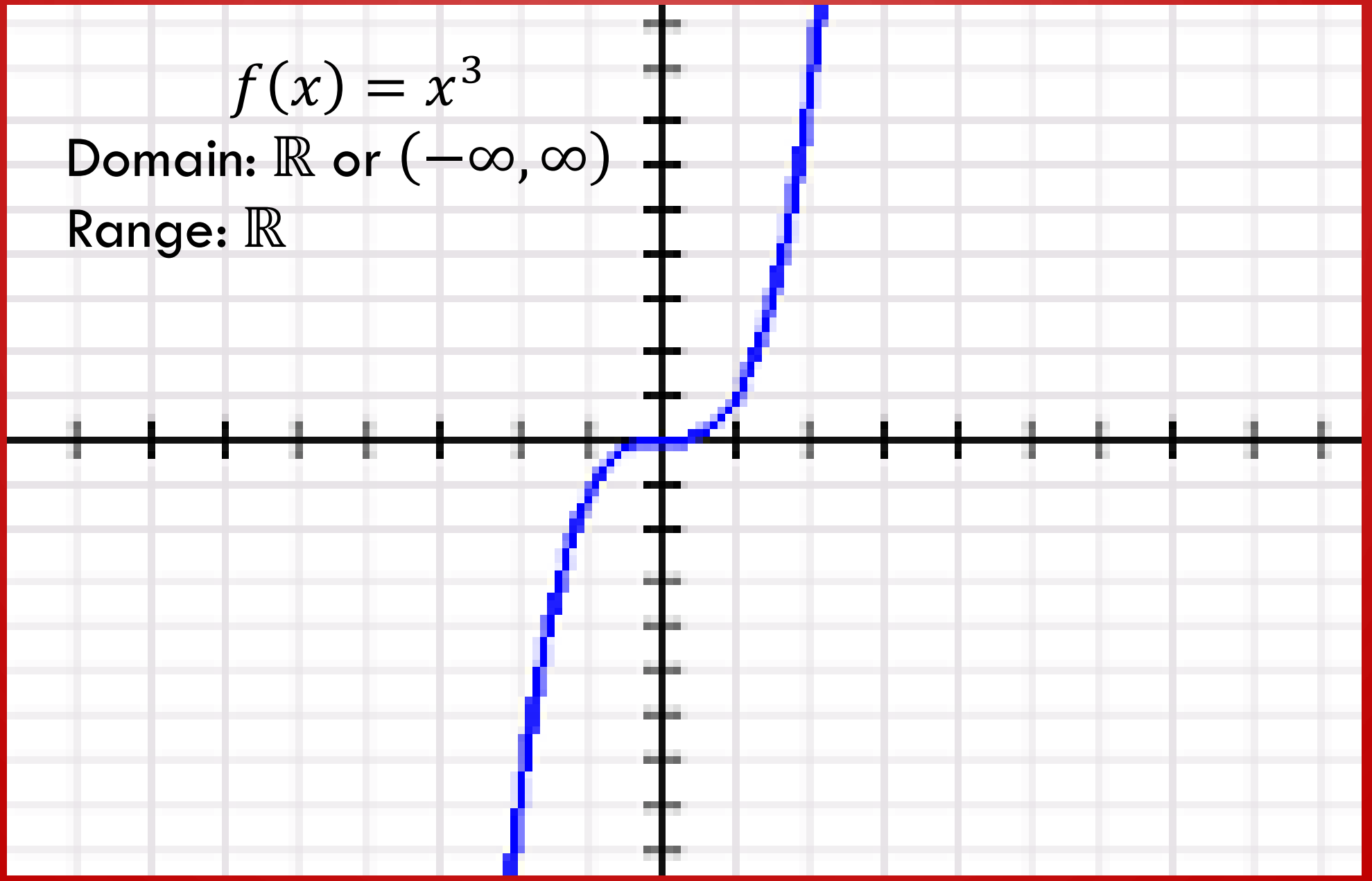


$$f(x) = \sqrt{x} = \sqrt[2]{x}$$

Domain: $[0, \infty)$

Range: $[0, \infty)$

Cubic Parent Function

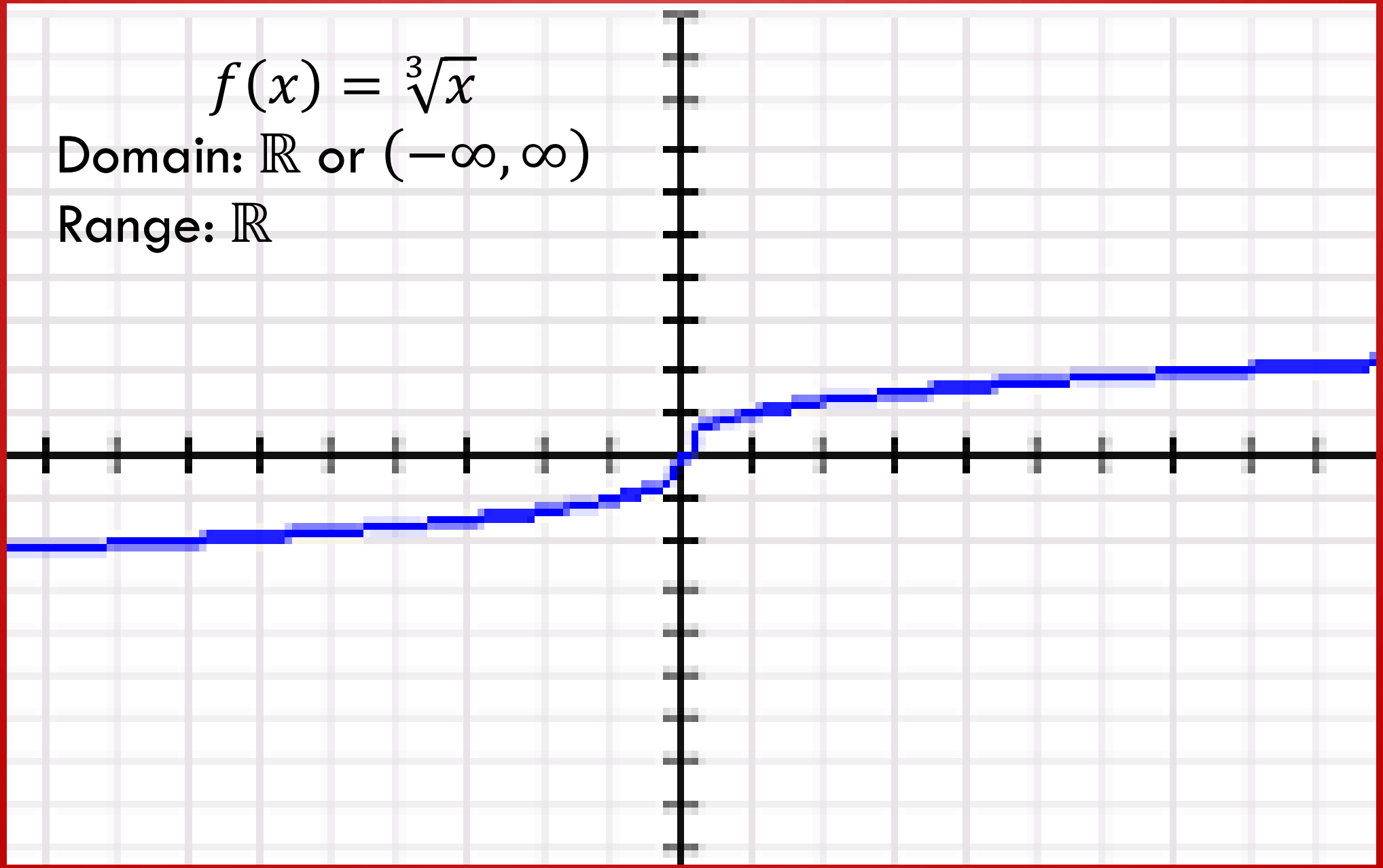


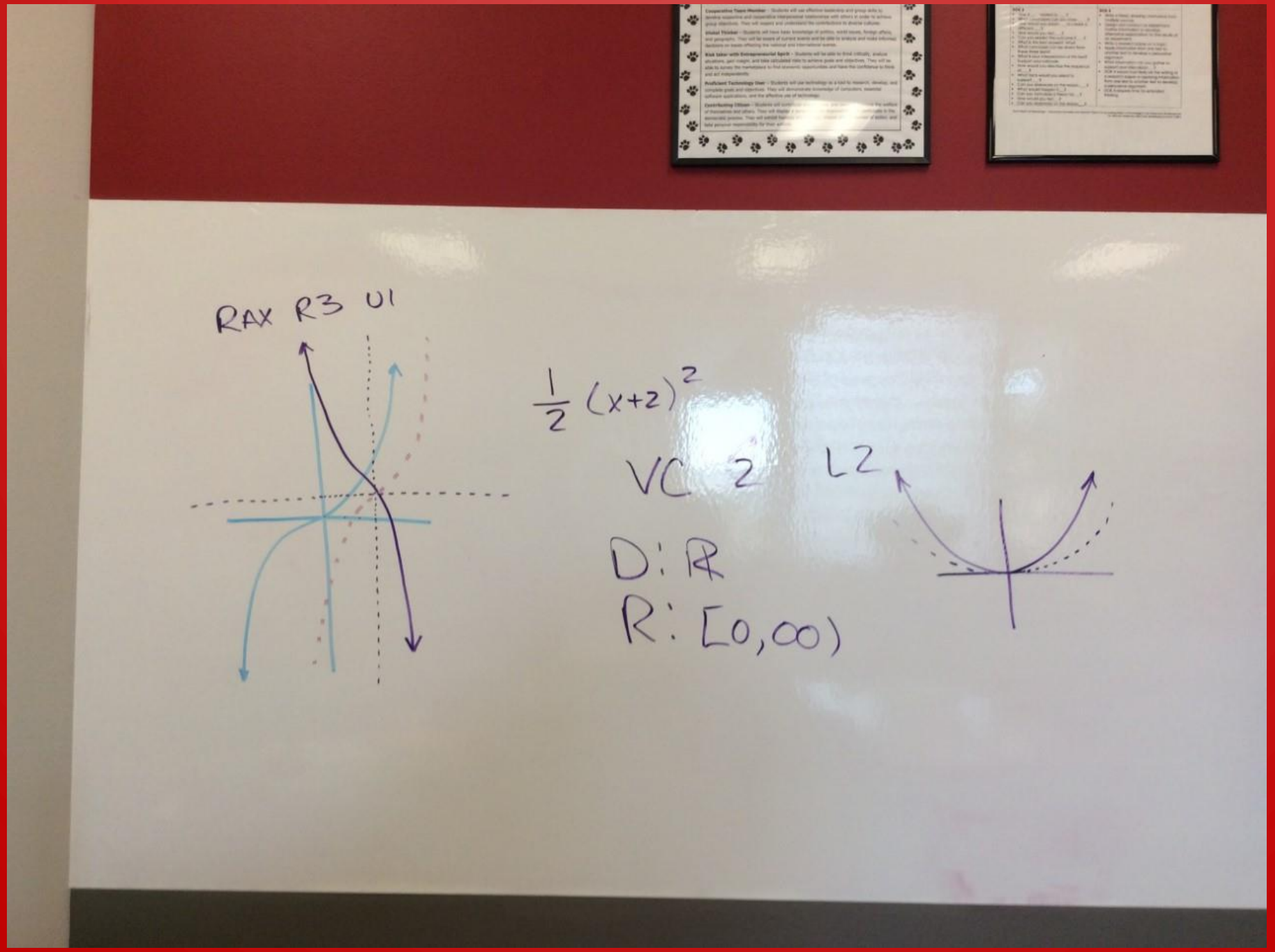
Cube Root Parent Function

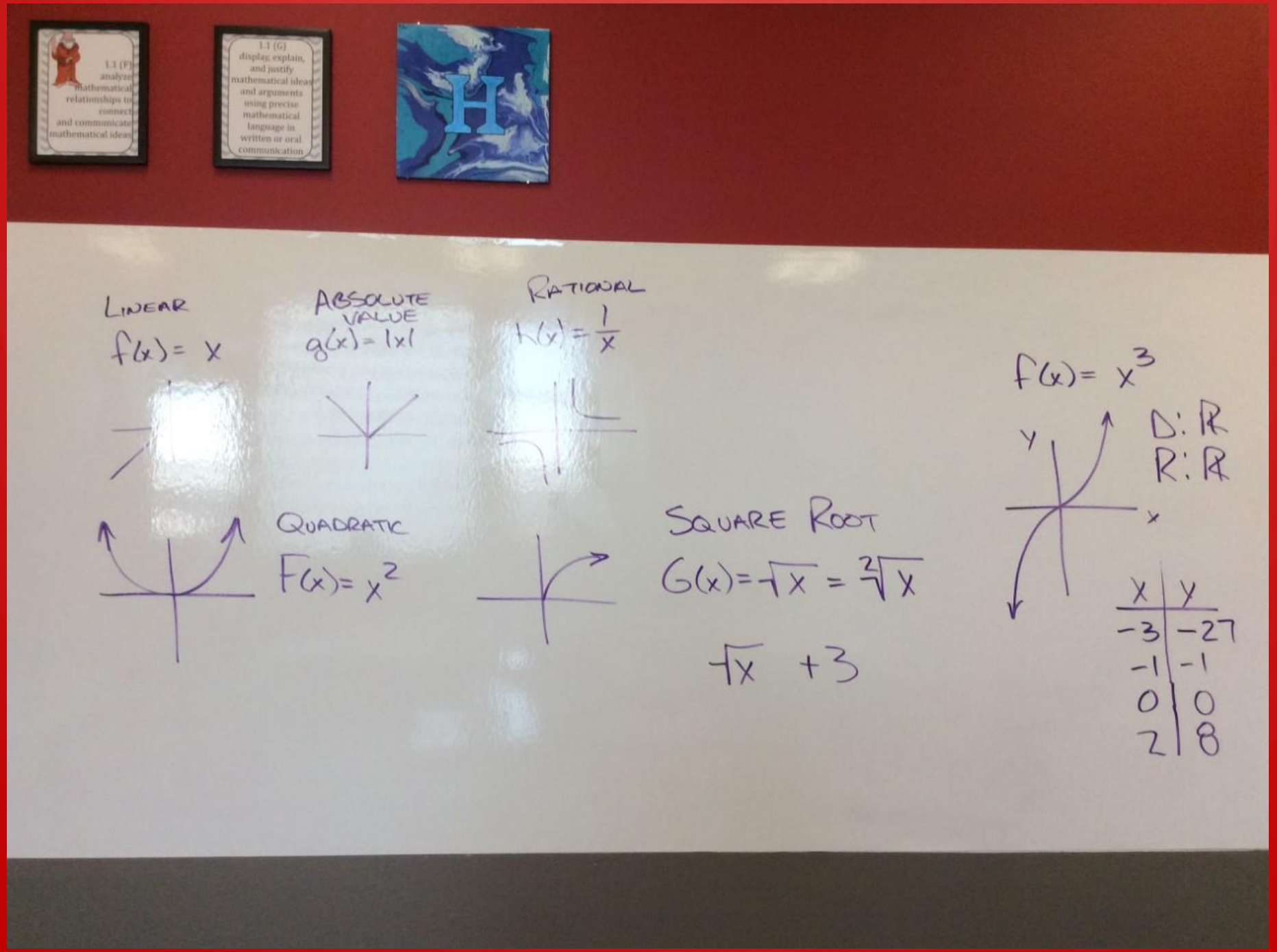
$$f(x) = \sqrt[3]{x}$$

Domain: $\mathbb{R}$ or $(-\infty, \infty)$

Range: $\mathbb{R}$




RAX R3 U1
$\frac{1}{2}(x+2)^2$
VC 2 L2
D: R
R: [0,∞)

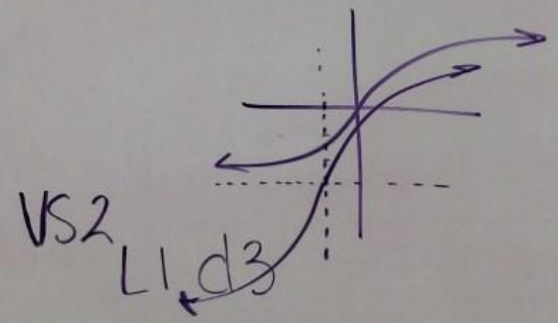

1.1 (F) analyze mathematical relationships to connect and communicate mathematical ideas
1.1 (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication
H
LINEAR
f(x) = x
ABSOLUTE VALUE
g(x) = |x|
RATIONAL
h(x) = 1/x
QUADRATIC
F(x) = x²
SQUARE ROOT
G(x) = √x = ∛x
√x + 3
f(x) = x³
y
x
D: R
R: R
X | Y
-3 | -27
-1 | -1
0 | 0
2 | 8

CUBE ROOT

$f(x) = \sqrt[3]{x}$

D: $\mathbb{R}$

R: $\mathbb{R}$



VS2

L1, d3

x^3+5

$(x+5)^3$

$(x-5)^3$

x^3+5 $\sqrt[3]{x}+5$ U5

$(x+5)^3$ $\sqrt[3]{x+5}$ L5

$(x-5)^3-5$ $\sqrt[3]{x-5}-5$ R5 D5

$2\sqrt[3]{x}$ VS

$\sqrt[3]{2x}$ HC

$-(x-3)^3+1$ D: $\mathbb{R}$ R: $\mathbb{R}$

R3 UP1 RHX

x	y
-3	217
0	28
3	1