BOARD NOTES

28 AUGUST 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.

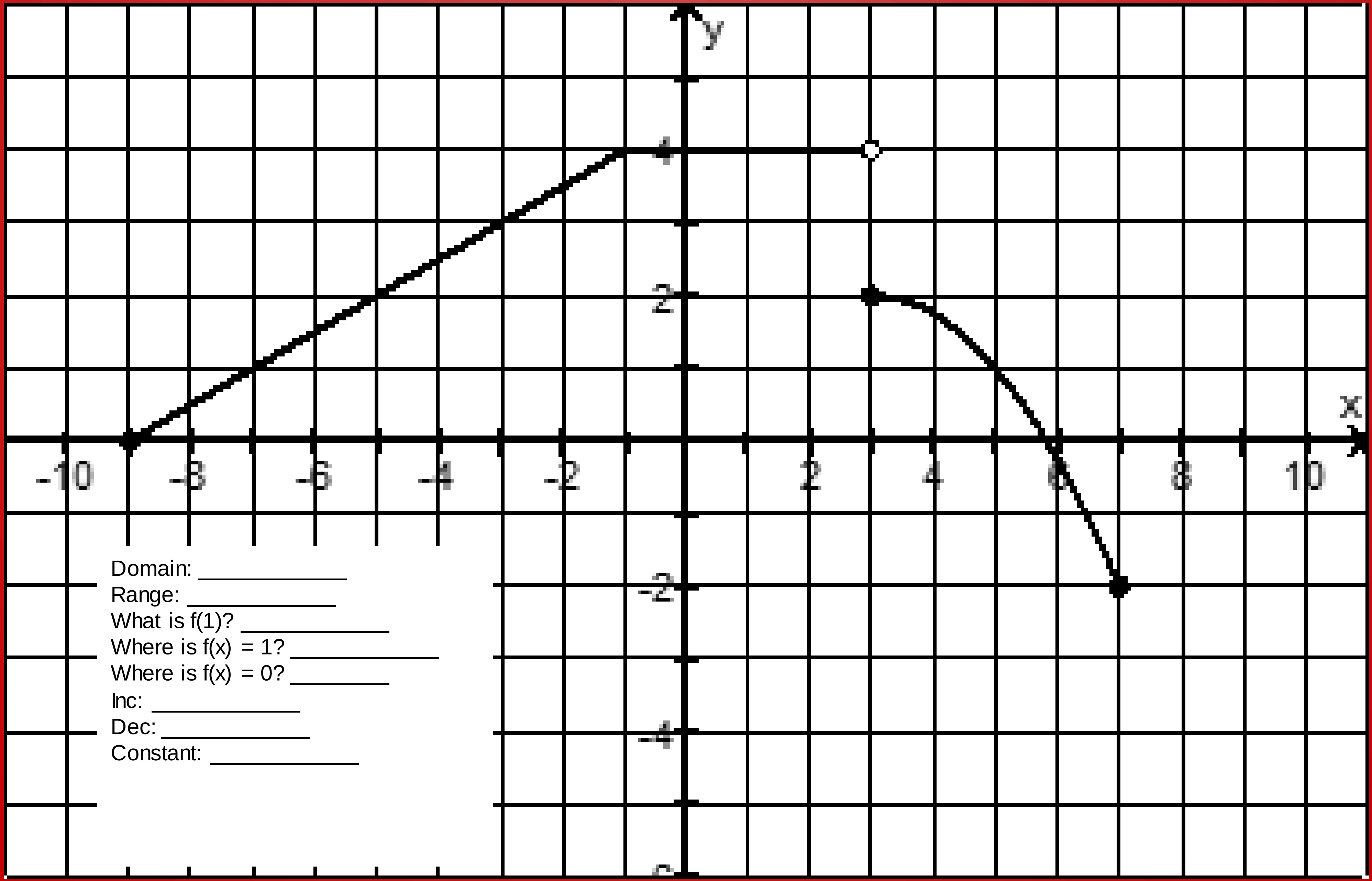
We will be able to analyze the key attributes of a graph or equation to include the domain, range, increasing, decreasing, constant, x and y intercepts.

WHAT WE NEED:

- TI – 84
- Definition of:
  - Domain
  - Range
  - Intercepts
  - Increasing vs Decreasing

I WILL BE ABLE TO COMPLETE MY HOMEWORK GIVING THE

- Domain
- Range
- Intercepts (if any)
- Intervals of:
  - Increasing
  - Decreasing
  - Constant



Domain: ____________

Range: ____________

What is f(1)? ____________

Where is f(x) = 1? ____________

Where is f(x) = 0? ________

Inc: ____________

Dec: ____________

Constant: ____________

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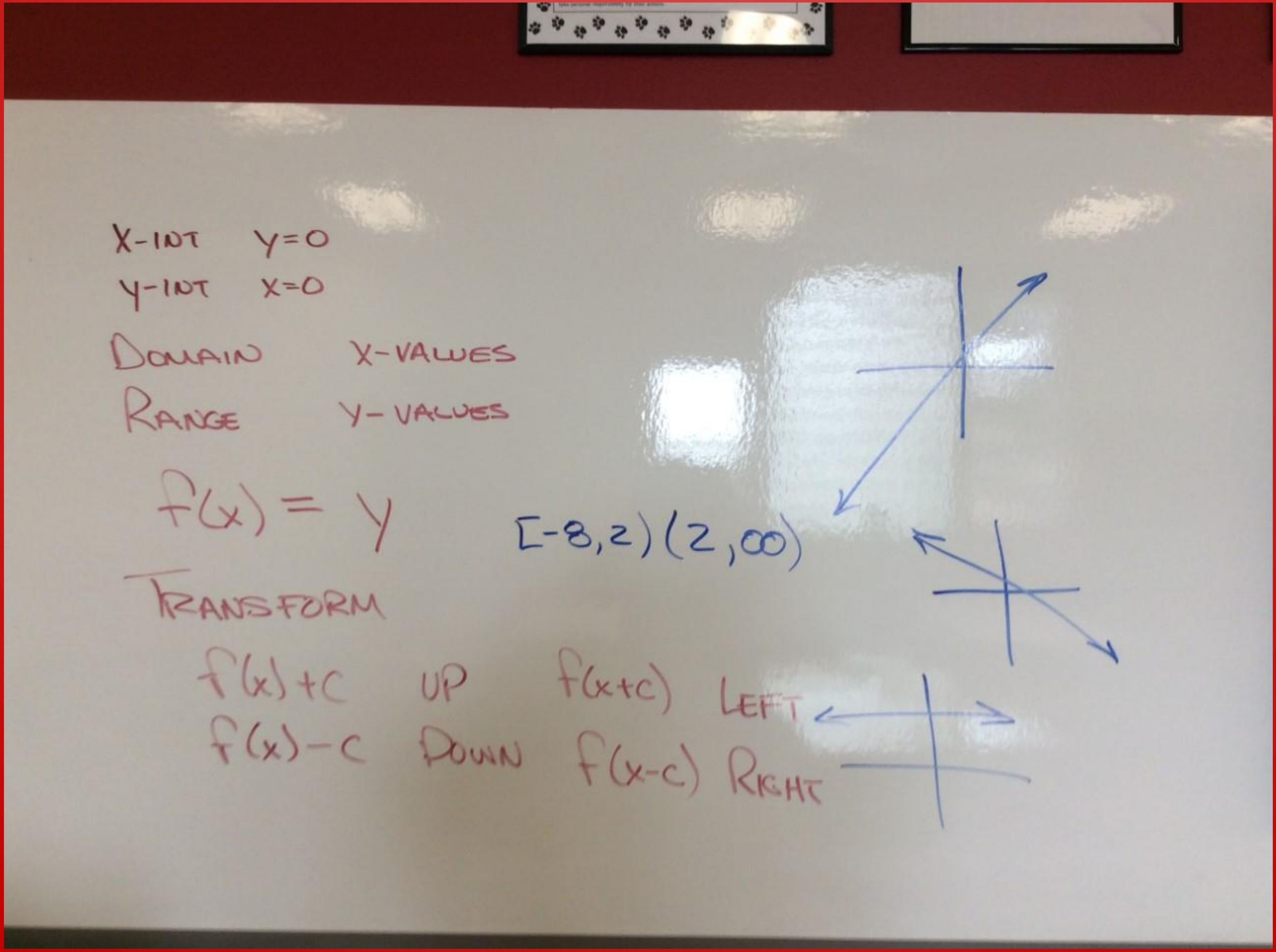

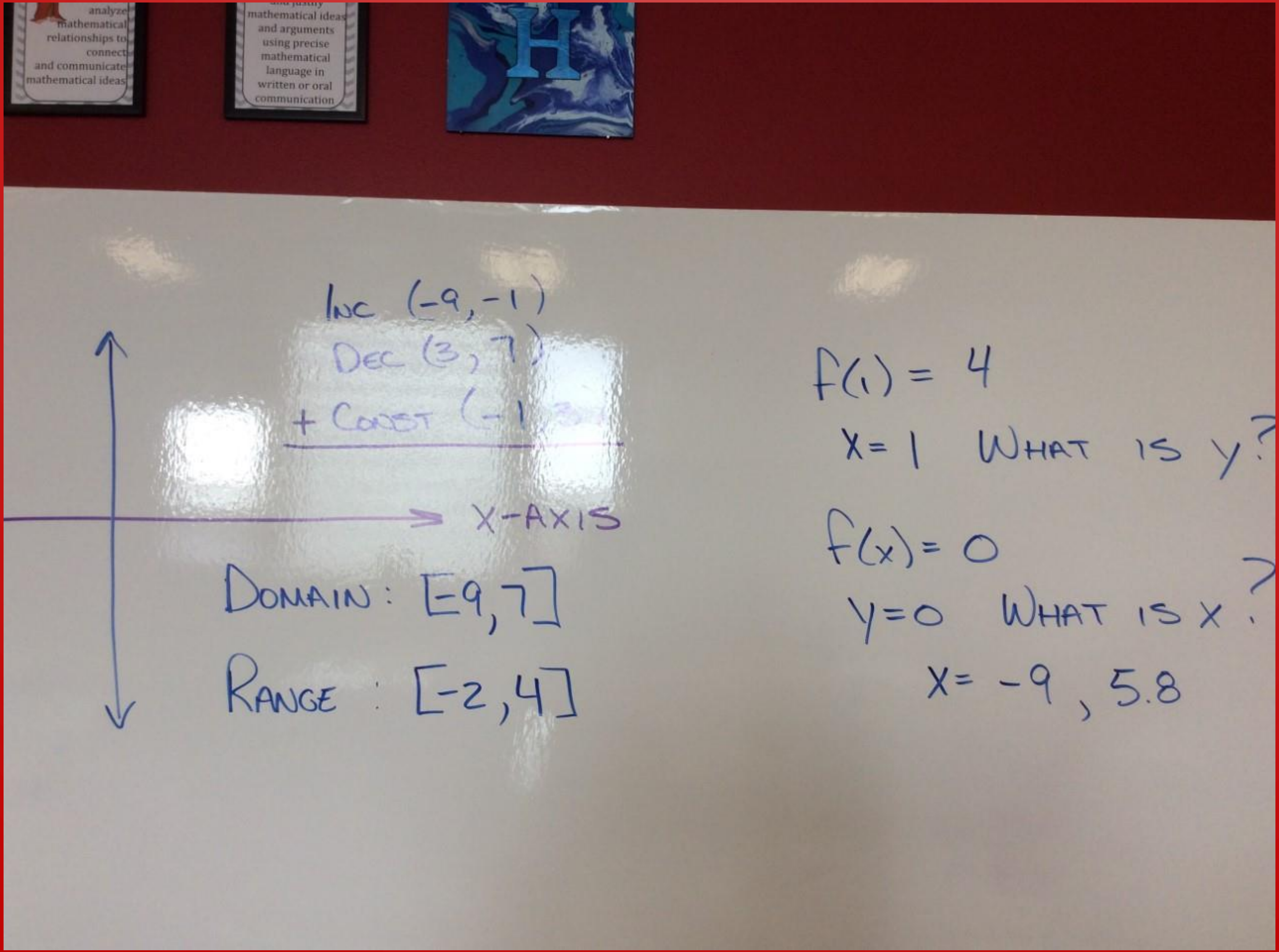
analyze mathematical relationships to connect and communicate mathematical ideas
mathematical ideas and arguments using precise mathematical language in written or oral communication
H
INC (-9, -1)
DEC (3, 7)
+ CONST (-1,
X-AXIS
DOMAIN: [-9, 7]
RANGE: [-2, 4]
f(1) = 4
X = 1 WHAT IS Y?
f(x) = 0
Y = 0 WHAT IS X?
X = -9, 5.8

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

OR

$\mathbb{R}$ This means all real numbers

$9 + 6 = 15$

$) = 4x^2 - 4x$

$f(x) = \frac{a}{b}$ $\quad b \neq 0$

$f(x) = \sqrt{a}$ $\quad a \geq 0$

$f(x) = \log_b a$ $\quad a > 0$

$f(x) = 5x^2 + 4x - 1$

D: $\mathbb{R}$

X-INT

$0 = 5x^2 + 4x - 1$

$= (5x-1)(x+1)$

$5x - 1 = 0 \quad x + 1 = 0$

$x = \frac{1}{5}, -1$

Y-INT

$y = 5 \cdot 0^2 + 4 \cdot 0 - 1 = -1$

$$g(x) = \frac{3x}{x-5} \qquad b \neq 0$$

$$b = x - 5$$

$$x - 5 = 0$$

$$x = 5$$

$$(-\infty, 5)(5, \infty)$$

X-INT

$$0 = \frac{3x}{x-5}$$

$$0 = 3x$$

$$x = 0$$

Y-INT

$$y = \frac{3 \cdot 0}{0-5}$$

$$= 0$$

$h(x) = \sqrt{x+4}$ $\quad D: [-4, \infty)$

$a \geq 0$

$a = \sqrt{x+4}$

$(\sqrt{x+4})^2 \geq 0^2$

$x+4 \geq 0$

$x \geq -4$

$f(x) = x^2 - 2x$

$f(2)$

$x = 2$ WHAT IS y

$f(2) = 2^2 - 2(2) = 0$

$f(-3) = (-3)^2 - 2(-3) = 9 + 6 = 15$

$f(2x) = (2x)^2 - 2(2x) = 4x^2 - 4x$

$-f(x) = -(x^2 - 2x) = -x^2 + 2x$

$f(-x) = x^2 + 2x$

DOMAIN: $(-\infty, \infty)$

OR

$\mathbb{R}$

THIS ME

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