Functions & Domain Review

$$2x - 3y + 4z = -8$$
$$4x + 2y - z = -9$$
$$8x - 7y + 6z = -20$$

Matrix Eq.

$$[A] \cdot \begin{bmatrix} 2 & -3 & 4 \\ 4 & 2 & -1 \\ 8 & -7 & 6 \end{bmatrix} \cdot \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} -8 \\ -9 \\ -20 \end{bmatrix}$$

$[A]^{-1}$

$$\begin{bmatrix} a & b \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}^{-1} \cdot \begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} 2 & -3 & 4 \\ 4 & 2 & -1 \\ 8 & -7 & 6 \end{bmatrix}^{-1} \cdot \begin{bmatrix} -8 \\ -9 \\ -20 \end{bmatrix}$$

Interval Notation

$\cup$ Union

$\cap$ Intersection

Function?

$\{(-2,3)(4,7)(-5,3)(6,-2)\}$

yes

No

Not a function if:

* $\pm_{even}$
* y
* $|y|$

$|y| = x+2$

$= 1+2$

$|y| = 3$

$y = -3$ or 3

2

-2
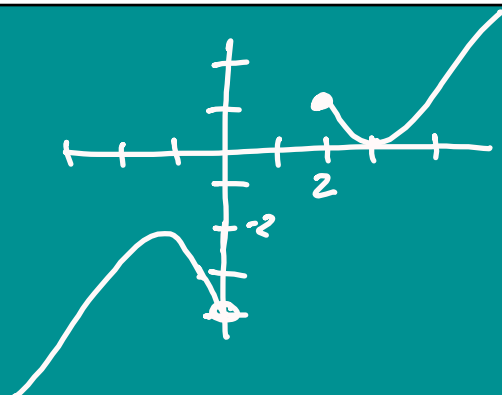
Domain: $(-\infty, 0) \cup [2, \infty)$
   L to R
Range:
   Low to High $(-\infty, -2] \cup [0, \infty)$

Function	Method to Find
Polyn.	$(-\infty, \infty)$
Rational	Denom $\neq 0$
Odd Root	$\mathbb{R}$
Even Roots	must contain $+$ Values $\underline{OR}$ Test Points

h) & i.)

1) Test pts.
2) Check for denom $\neq 0$

$$f(x) = \frac{\sqrt{x^2 - 9}}{x+4}$$

$\frac{x+}{-4} \quad \frac{-}{-3} \quad \frac{[+}{3}$

$(-\infty, -4) \cup (-4, -3] \cup [3, \infty)$

$$f(x) = \sqrt{\frac{\overset{(x+3)}{\underset{(x-3)}{}}\, x^2 - 9}{x+4}}$$

$\frac{=}{+}$

$\quad -\, (\frac{+}{-4}] \quad - \quad [\frac{+}{3}$

$-4 \quad -3 \quad 0 \quad 3$