$$\frac{\frac{x}{x}\cdot\frac{2}{5} - \frac{3}{x}\cdot\frac{5}{5}}{\frac{2}{5x^2}} = \frac{\frac{2x-15}{5x}}{\frac{2}{5x^2}} \quad \begin{matrix} K \\ C \\ F \end{matrix}$$

$$= \frac{2x-15}{\cancel{5x}} \cdot \frac{\cancel{5x^2}}{2}$$

$$= \boxed{\frac{x(2x-15)}{2}}$$

or

$$= \boxed{\frac{2x^2-15x}{2}}$$

Sep 14-11:15 AM

① $\frac{1}{3} + \left(\frac{1}{3}\cdot 6\right) + 3 \div \frac{1}{2} - \frac{1}{3}$

② $\frac{1}{3} + 2 + \left(3 \div \frac{1}{2}\right) - \frac{1}{3}$

③ $\left(\frac{1}{3} + 2\right) + 6 - \frac{1}{3}$

$\frac{1+6}{3}$

④ $\left(\frac{7}{3} + 6\right) - \frac{1}{3}$

$\frac{7+18}{3}$

$\frac{25}{3} - \frac{1}{3} = \frac{25-1}{3} = \frac{24}{3} = 8$

Sep 14-11:18 AM

Finding the Domain of a Function

- The Domain of a function is the set of valid inputs of the function.

e.g. $f(x) = \boxed{\frac{1}{x-4}}$ Rule

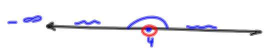
Input

- Because a Rational function is not defined when the denominator is zero.

$x - 4 = 0$

$x = 4$

So $x \neq 4$



- $(-\infty, 4) \cup (4, \infty)$
- $\{x \mid x \in \mathbb{R} \text{ \& } x \neq 4\}$

Sep 14-11:21 AM

$g(x) = \sqrt{x}$ Rule

- A Square Root (or even Indexed) Radical can not have a negative number as a Radicand

$x \geq 0$

- $[0, \infty)$
- $\{x \mid x \in \mathbb{R} \text{ \& } x \geq 0\}$

$g(0) = \sqrt{(0)} = 0$

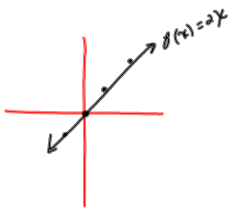
$g(-1) = \sqrt{-1}$

Invalid Input $\quad (\ \ )^2 = -1$

Sep 14-11:30 AM

$f(x) = 2x$

x	$f(x)$
0	0
1	2
2	4
-1	-2



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

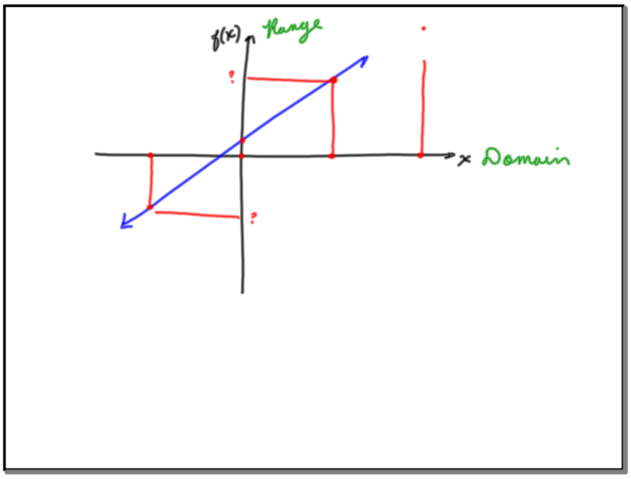
$\{x \mid x \in \mathbb{R}\}$

Sep 14-11:41 AM

x^1

x^2

Sep 14-11:45 AM



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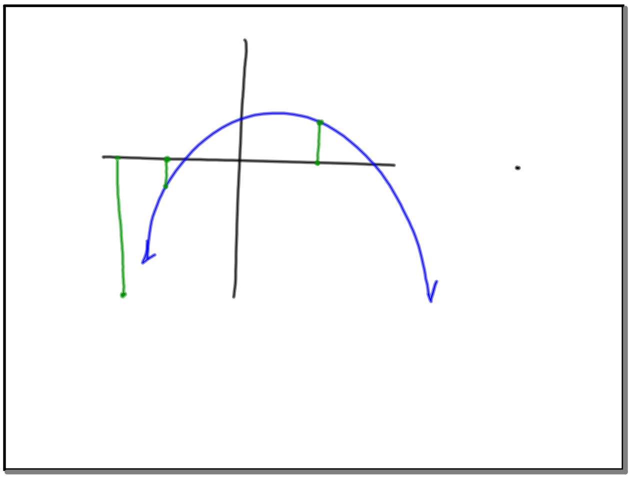

Sep 14-11:49 AM

$f(x) = \sqrt{x-5}$

$x - 5 \ge 0$

$x \ge 5$

$[5, \infty)$

$\sqrt{4-5} = \sqrt{-1}$

$-2 \le x < 8$

x	$f(x)$
0	-5
5	0

Sep 14-11:51 AM