September 16, 2016

Restrictions on the Domain

$f(x) = \frac{1}{x} \rightarrow x \neq 0$

$f(x) = \sqrt[2]{x} \rightarrow x \geq 0$

Sep 16-11:03 AM

#3) $f(x) = \sqrt{x-5}$ D: $[5, \infty)$

$x - 5 \geq 0$

$x \geq 5$

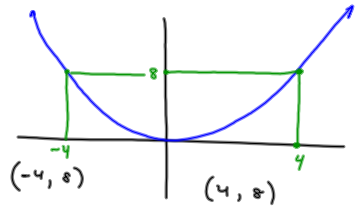
$f(5) = \sqrt{5-5} = \sqrt{0} = 0$ okay

if $x = 4$

$f(4) = \sqrt{4-5} = \sqrt{-1}$ not a Real Number

$(?)^2 = -1$

Sep 16-11:21 AM



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

Sep 16-11:07 AM

$s(t) = \frac{1}{t-3}$

$t - 3 = 0$

$t = 3$

$t \neq 3$

D: $(-\infty, 3) \cup (3, \infty)$

Sep 16-11:10 AM

$f(h) = \frac{h+2}{h^2-1}$

$h^2 - 1 = 0$

$\sqrt{h^2} = \pm\sqrt{1}$

$h = \pm 1$

$f(-1) = \frac{(-1)+2}{(-1)^2-1} = \frac{1}{1-1} = \frac{1}{0}$

D: $(-\infty, -1) \cup (-1, 1) \cup (1, \infty)$

$f(-2) = \frac{-2+2}{(-2)^2-1} = \frac{0}{4-1} = \frac{0}{3} = 0$

$(-2, 0)$

Sep 16-11:12 AM

$g(x) = \frac{\sqrt{x-2}}{x+2}$

① Denominator $\neq 0$

② a Square Root as a Numerator. $x \geq 0$

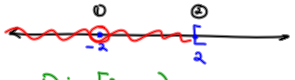
① $x + 2 = 0$

$x = -2$

so, $x \neq -2$ in the domain

② $x - 2 \geq 0$

$x \geq 2$



D: $[2, \infty)$

Sep 16-11:16 AM

$f(0) = \frac{\sqrt{0-2}}{0+2} = \frac{\sqrt{-2}}{2}$

$\sqrt{-2} = (?)^2 = -2$

$\sqrt{4} = 2$

why $(2)^2 = 4$

Sep 16-11:29 AM

#6) $g(a) = \sqrt[3]{a-1}$ (3 = odd index)

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

Sep 16-11:33 AM

x^1

x^2

x^3

x^4

x^5

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

* $\frac{1}{x}$ D: $(-\infty, 0) \cup (0, \infty)$

* $\sqrt{x}$ D: $[0, \infty)$

$\sqrt[3]{x}$ D: $(-\infty, \infty)$

Sep 16-11:34 AM

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

$-\infty \to 0 \leftarrow +\infty$

x	$f(x)$
0	und
1	1
2	$\frac{1}{2}$
3	$\frac{1}{3}$
-1	-1
-2	$-\frac{1}{2}$
$\frac{1}{2}$	2
$-\frac{1}{2}$	-2

Sep 16-11:39 AM

$R(q) = \frac{q^4}{q^2+q-6} = 0$

$q^2 + q - 6 = 0$

$(q+3)(q-2) = 0$

① $q + 3 = 0$, $q = -3$

② $q - 2 = 0$, $q = 2$

} removed from the Domain

$D: (-\infty, -3) \cup (-3, 2) \cup (2, \infty)$

Sep 16-11:44 AM