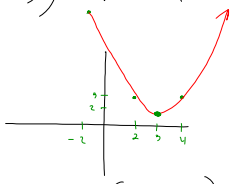
$g(x) = (x-3)^2 + 2$

x	$g(x)$
2	3
3	2
-2	27
4	3



$D \to (-\infty, 3)$

$R \to (3, \infty)$

Oct 7-10:59 AM

$f(x) = x$

$f(x) = |x|$

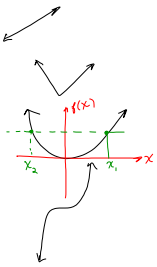
$f(x) = x^2$

$f(x) = x^3$

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

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

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



Oct 7-11:04 AM

$f(x) = \sqrt{x-3}$ $g(x) = x^2 - 2x$

① $f(x) + g(x)$

$(f+g)(x) = \sqrt{x-3} + x^2 - 2x$

$= x^2 - 2x + \sqrt{x-3}$ $x-3 \geq 0$, $x \geq 3$

② $g(x) + f(x)$ $D: [3, \infty)$

$(g+f)(x) = x^2 - 2x + \sqrt{x-3}$

Oct 7-11:19 AM

③ $(f-g)(x)$

④ $\left(\frac{f}{g}\right)(x) = \frac{\sqrt{x-3}}{x^2-2x}$ $x-3 \geq 0$, $x \geq 3$

$x^2 - 2x = 0$

$x(x-2) = 0$

① $x \neq 0$

② $x \neq 2$

$D: [3, \infty)$

let $x = 4$

$\frac{\sqrt{4-3}}{(4)^2-2(4)} = \frac{\sqrt{1}}{16-8} = \frac{1}{8}$

$x = 1$

$\frac{\sqrt{1-3}}{(1)^2-2(1)} = \frac{\sqrt{-2}}{-1} = -\sqrt{-2}$

not a Real Number

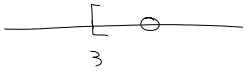
Oct 7-11:27 AM

⑤ $\left(\frac{g}{f}\right)(x) =$

Oct 7-11:28 AM

$\frac{\sqrt{x-3}}{x^2-4x}$ $x \geq 3$

$x \neq 0$ or 4



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

Oct 7-11:48 AM