Quiz 7.5

1 (2 points) Rationalize the denominator. Assume all variables are positive.

$$\frac{3}{\sqrt{12}}$$

2 (2 points) Rationalize the denominator. Assume all variables are positive

$$\frac{\sqrt{3}-4\sqrt{2}}{2\sqrt{3}+5\sqrt{2}}$$

3. (2 point) Perform the indication and simplify.

$$\frac{3}{\sqrt{18}}-\sqrt{\frac{1}{2}}$$

7.5 HW Questions

37) $\frac{\sqrt{p}}{\sqrt{p}+\sqrt{q}} \cdot \frac{\sqrt{p}-\sqrt{q}}{\sqrt{p}-\sqrt{q}}$

$\frac{p-\sqrt{pq}}{p-\cancel{\sqrt{pq}}+\cancel{\sqrt{pq}}-q} = \frac{p-\sqrt{pq}}{p-q}$

7.6 Functions Involving Radicals

For the functions $f(x)=\sqrt{x+2}$ and $g(x)=\sqrt[3]{3x+1}$ find

$f(7) = \sqrt{7+2} = \sqrt{9} = 3$

$(7,3)$

$(10, 2\sqrt{3})$

$f(10) = \sqrt{10+2} = \sqrt{12} = 2\sqrt{3}$

$g(-3)$

Find the Domain of each of the following functions.

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

$x-5 \geq 0$

$x \geq 5$

$[5,\infty)$ or $\{x \mid x \geq 5\}$

interval notation set notation

$g(x)=\sqrt[3]{2x+1}$

$(-\infty,\infty)$ or $\{x \mid x \text{ is a real } \#\}$

$h(t)=\sqrt[4]{5-2t}$

You try

$H(x)=\sqrt{x+6}$

$x+6\geq 0$

$x\geq -6$

$[-6,\infty)$ or $\{x\mid x\geq -6\}$

$g(t)=\sqrt[5]{3t-1}$

$F(m)=\sqrt[6]{6-3m}$

Find the Domain of each of the following function.

$G(x)=\sqrt{\dfrac{x+1}{x-2}}$

$x+1\geq 0$

$x\geq -1$

$x-2\geq 0$

$x\geq 2$

$\dfrac{-a}{b}=-\dfrac{a}{b}$

$\dfrac{a}{-b}=-\dfrac{a}{b}$

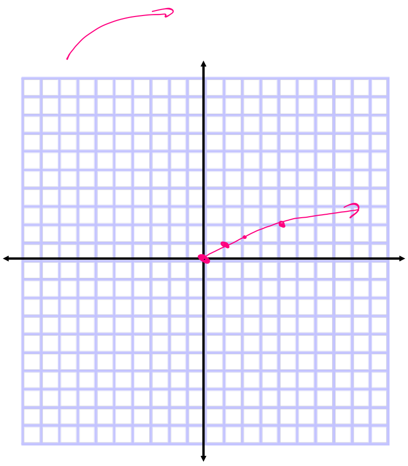
$-1,\infty$ $[-1,2)\cup(2,\infty)$

$\{x\mid x\geq -1,\ x\neq 2\}$

Graph by plotting points. Find the domain and Range.

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

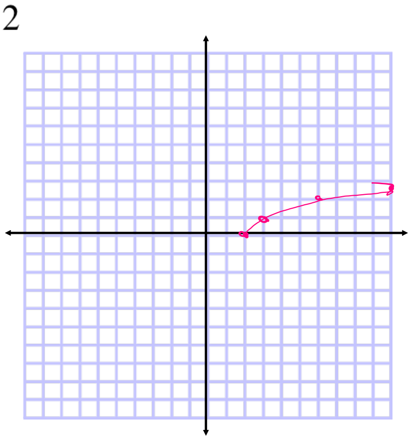
x	y
0	0
1	1
2	1.4
4	2
~~-1~~	



Graph by plotting points. Find the domain and Range.

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

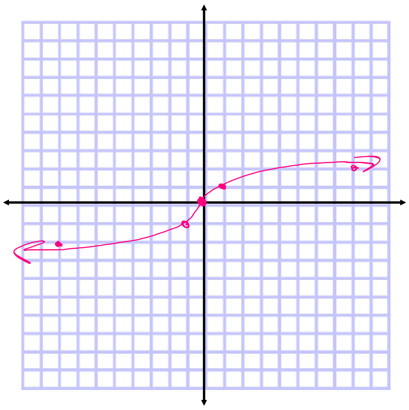
x	y
2	0
3	1
6	2



Graph by plotting points. Find the domain and Range.

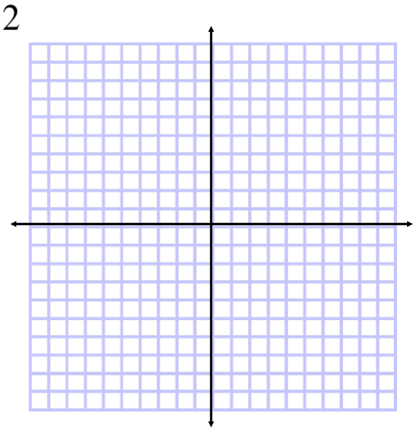
$P(x)=\sqrt[3]{x}$

x	y
0	0
1	1
-1	-1
8	2
-8	-2



Graph by plotting points. Find the domain and Range.

$g(x)=\sqrt[3]{x}+2$



$\sqrt{\frac{x+1}{x-7}}$ $[-1,7)\cup(7,\infty)$

$x\neq 7$

$x+1\geq 0$ $x\geq -1$

$x-7\geq 0$ $x\geq 7$