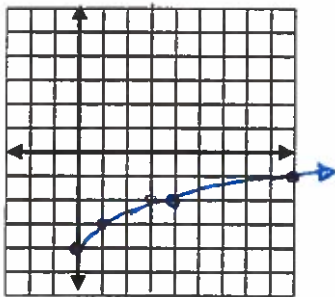


Graph each radical function on the graph provided. You must show an x/y-chart for each with a minimum of four points, but you may only use one decimal per problem.

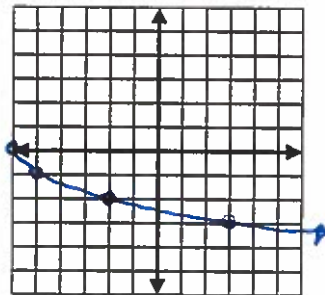
1) $y = \sqrt{x} - 4$

x	y
0	-4
1	-3
4	-2
9	-1



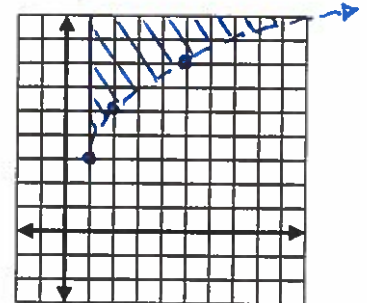
2) $y = -\sqrt{x+6}$

x	y
-6	0
-5	-1
-2	-2
3	-3



3) $y > 2\sqrt{x-1} + 3$

x	y
1	3
2	5
5	7
any decimal	



List the domain and range for each of the graphs above.

4) D: $x \geq 0$

R: $y \geq -4$

5) D: $x \geq -6$

R: $y \leq 0$

6) D: $x \geq 1$

R: $y \geq 3$

Find the domain and range for the following functions. You do not need to graph them.

7) $f(x) = \sqrt{3x-4}$

D: $x \geq 4/3$

$V(4/3, 0)$

R: $y \geq 0$

8) $f(x) = 6 - 3\sqrt{2x+8}$

D: $x \geq -4$

$V(-4, 6)$

R: $y \leq 6$

Find the vertical asymptotes and holes for each rational function. If one does not exist, leave it blank.

9) $f(x) = \frac{x^2 + 6x}{x+6}$

$x(x+6)$

10) $f(x) = \frac{10}{x^2 - 9x + 18}$

$(x-6)(x-3)$

11) $f(x) = \frac{2x+1}{2x^2 - 7x - 4}$

$(2x+1)(x-4)$

Asymptote(s): _____

A: $x = 6, x = 3$

A: $x = 4$

Hole(s): $x = -6$

H: _____

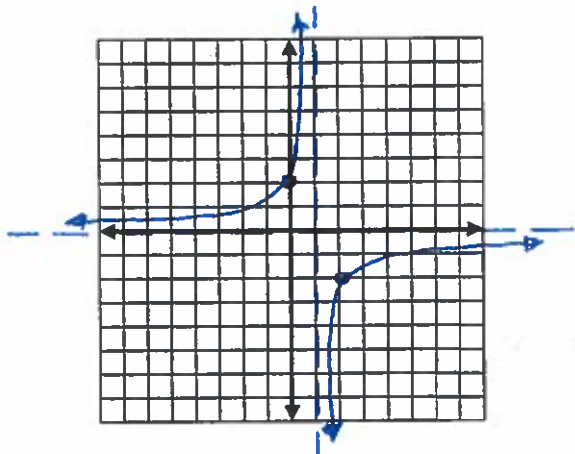
H: $x = -1/2$

Graph each rational function. Make sure to identify all asymptotes (both vertical and horizontal) with dashed lines. If an axis is also an asymptote, you do not need to show a dashed line.

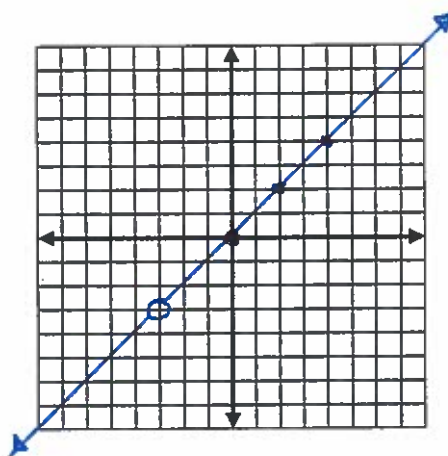
12) $y = \frac{-2}{x-1}$ Vert. Asy: $x=1$

x	y	x	y
0	2	2	-2
		100	-0.02 ≈ 0

H2. Asy: $y=0$



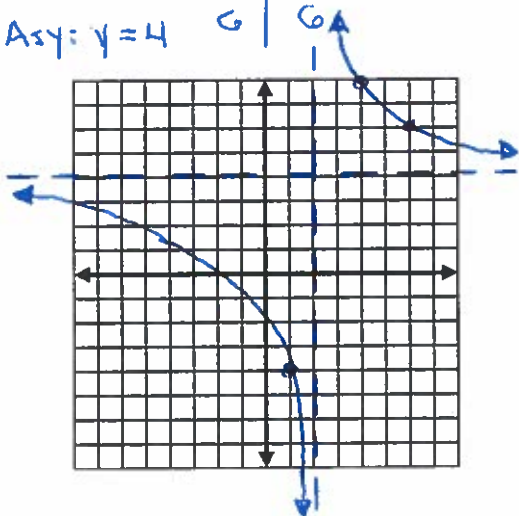
13) $f(x) = \frac{x^2+3x}{x+3} = \frac{x(x+3)}{x+3} = x$ (linear)
Hole: $x=-3$



14) $f(x) = \frac{4x}{x-2}$ Vert. Asy: $x=2$

x	y	x	y
1	-4	3	12
-100	+3.98	4	8
		6	6

H2. Asy: $y=4$



15) $y = \frac{x}{x^2+x-6} = \frac{x}{(x+3)(x-2)}$
Vert. Asy: $x=-3, x=2$

x	y	x	y	x	y
-4	-0.6	-2	0.5	3	0.5
		0	0	100	.009 ≈ 0
		1	-0.25		

H2. Asy: $y=0$

