Ch 4 Practice ~~Quiz~~ Test

answers!!

For the following problems list the transformations, find the equations of the asymptotes, find the domain, range and sketch a graph.

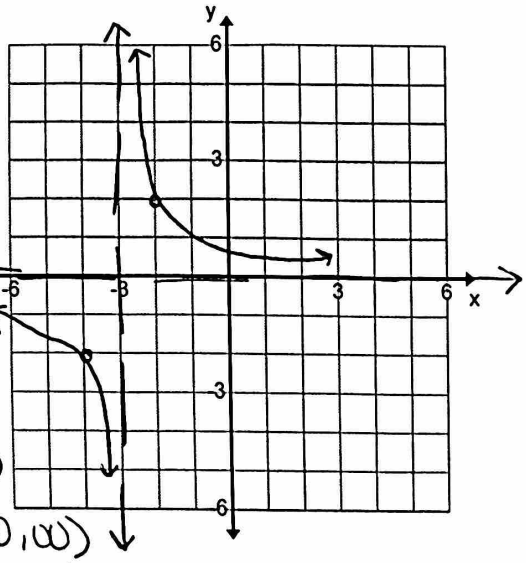
1. $y=\frac{2}{x+3}$

VD 2
L3

asym
$y=0$
$x=-3$

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

R: $(-\infty,0)\cup(0,\infty)$



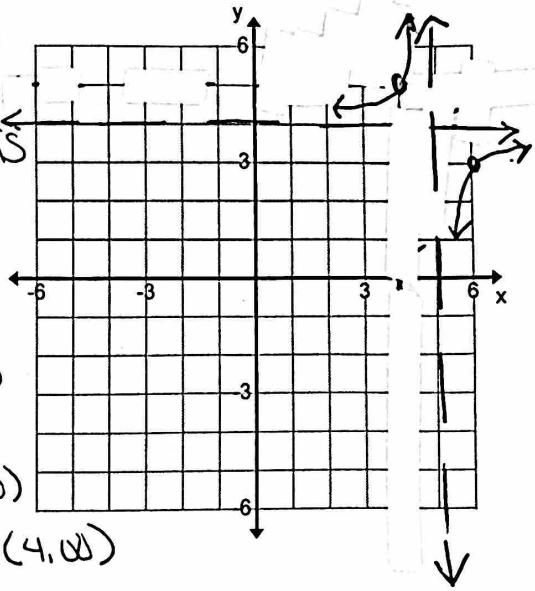
2. $y=-\frac{1}{x-5}+4$

reflect over x-axis
R5, U4

asym
$y=4$
$x=5$

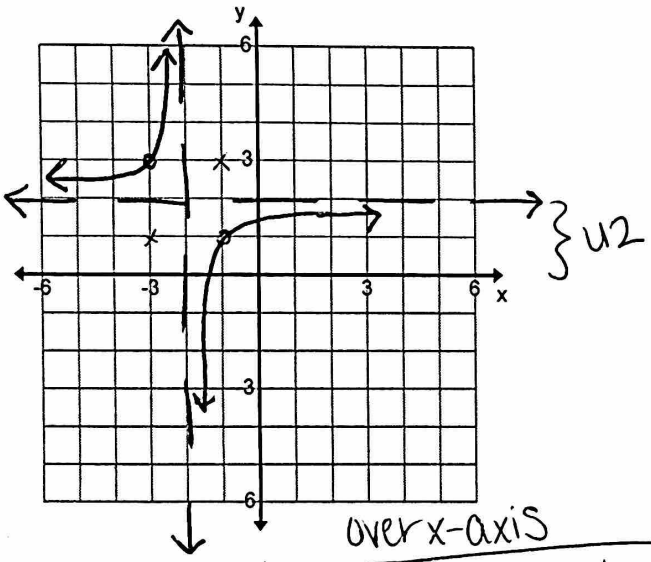
D: $(-\infty,5)\cup(5,\infty)$

R: $(-\infty,4)\cup(4,\infty)$



Find the equations given the following graphs.

3.



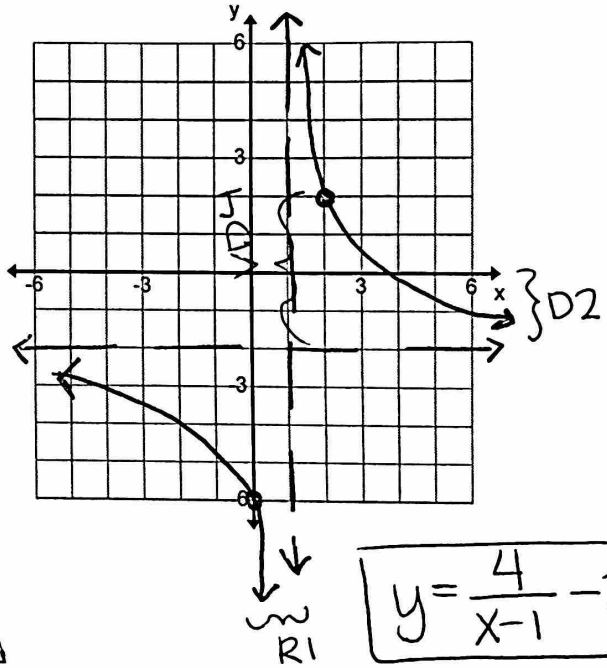
U2

L2

over x-axis

$$\boxed{y=-\frac{1}{x+2}+2}$$

4.



D2

R1

$$\boxed{y=\frac{4}{x-1}-2}$$

5. Use $f(x)=\frac{x^2-5x-14}{2x^2-11x+12}$ to find the following pieces of the graph.

a. Vertical Asymptote(s):

$ac=24$, $b=-11$ } $-8,-3$

$2x^2-8x-3x+12=0$

$2x(x-4)-3(x-4)=0$

$(2x-3)(x-4)=0$

$\boxed{x=4,\ x=3/2}$

b. Horizontal Asymptote:

$\frac{\text{same}}{\text{same}}$ $\boxed{y=\frac{1}{2}}$

c. X-intercept(s):

$x^2-5x-14=0$

$(x-7)(x+2)=0$

$x=7,\ x=-2$

$\boxed{(7,0)\ (-2,0)}$

d. Y-intercept(s):

$\frac{0^2-5(0)-14}{2(0)^2-11(0)+12}=\frac{-14}{12}=-\frac{7}{6}$

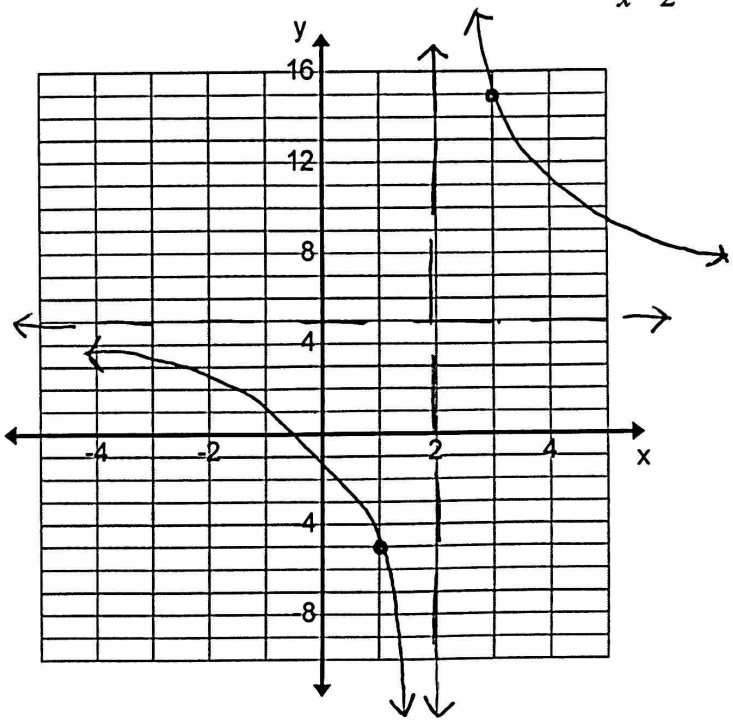
$\boxed{(0,-7/6)}$

6. Use long division to rearrange the following equation & then graph it using transformations. $g(x)=\frac{5x}{x-2}$

$$\begin{array}{r} 5 \\ x-2 \overline{)\,5x+0} \\ -\;\; 5x-10 \\ \hline 10 \end{array}$$

$$y=\frac{10}{x-2}+5$$

R2, U5, VD 10



7. Find all the key pieces of $f(x)=\frac{2x+5}{x-1}$ then graph the function.

a. Vertical Asymptote(s):

$x-1=0$

$x=1$

b. Horizontal Asymptote:

$\frac{\text{same}}{\text{same}}$ $y=2$

c. X-intercept(s):

$2x+5=0$

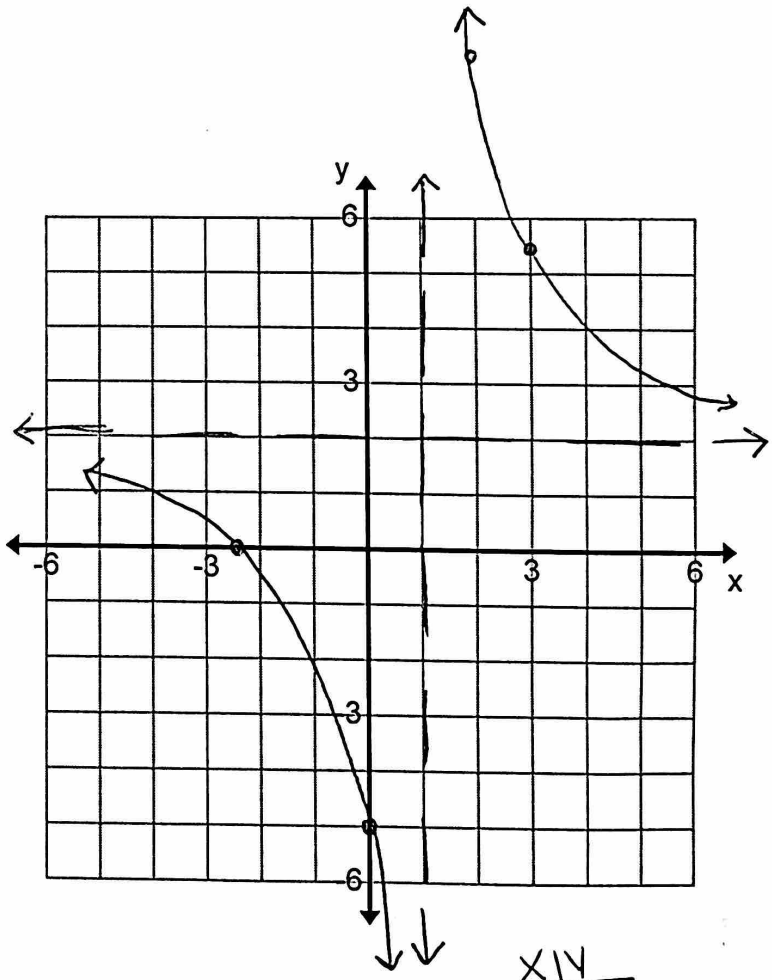
$2x=-5$ $(-5/2, 0)$

$x=-5/2$

d. Y-intercept(s):

$\frac{2(0)+5}{0-1}=-5/1=-5$

$(0,-5)$



X	Y
2	9
3	5.5