

C8L3 Notes

Graphing Rational Functions

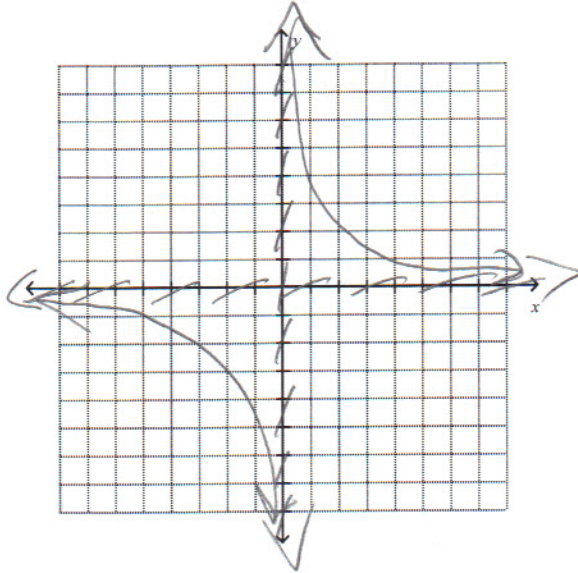
Graph the following rational functions.

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

x	y
1	2
-1	-2

$$\begin{aligned} \frac{x=1}{y} &= \frac{2}{1} \\ y &= 2 \end{aligned}$$

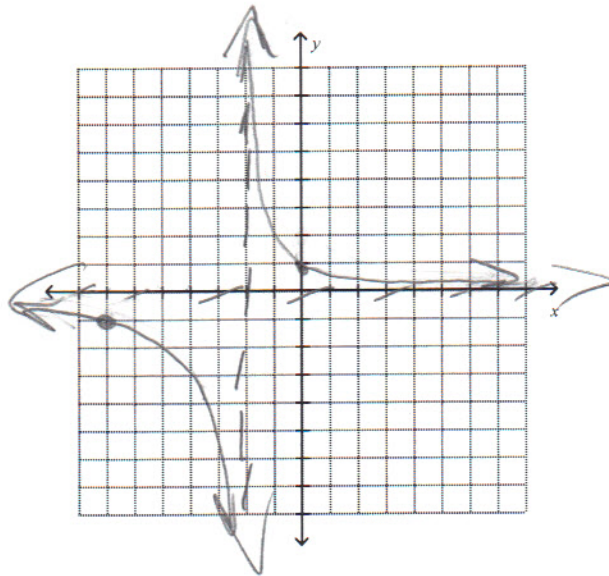
$$\begin{aligned} \frac{x=-1}{y} &= \frac{2}{-1} \\ y &= -2 \end{aligned}$$



2. $y = \frac{3}{x+4}$

x	y
-7	-1

$$\begin{aligned} \frac{x=-7}{y} &= \frac{3}{-7+4} \\ y &= \frac{3}{-3} \\ y &= -1 \end{aligned}$$



$$3. f(x) = \frac{2}{x-3} + 1$$

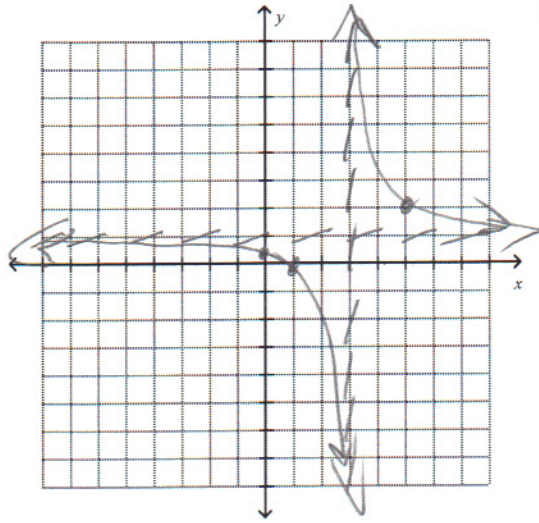
x	y
5	2

$$x=5$$

$$y = \frac{2}{5-3} + 1$$

$$y = \frac{2}{2} + 1$$

$$y = 1 + 1$$



$$4. y = \frac{x-3}{x+1}$$

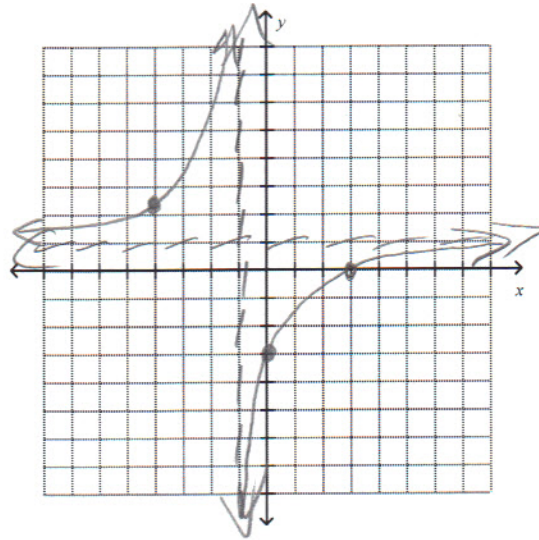
x	y
-4	7/3

$$x=-4$$

$$y = \frac{-4-3}{-4+1}$$

$$y = \frac{-7}{-3}$$

$$y = \frac{7}{3}$$



$$5. f(x) = \frac{x}{x^2-x-6} = \frac{x}{(x-3)(x+2)}$$

x	y
-1	1/4
1	1/6
-3	-1/2
4	2/3

$$x=-1$$

$$\frac{-1}{(-4)(1)}$$

$$\frac{1}{4}$$

$$x=1$$

$$\frac{1}{(-2)(3)}$$

$$-\frac{1}{6}$$

$$x=-3$$

$$\frac{-3}{-6(-1)}$$

$$-\frac{1}{2}$$

$$x=4$$

$$\frac{4}{(1)(6)}$$

$$\frac{2}{3}$$

