

MATH 0034
Spring 2017
IN CLASS ACTIVITY for 7.1

Name: _____

Consider the basic rational function

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

Some Properties of $r(x) = \frac{1}{x}$

Fill in the output values for the table below.

a. The domain is

x	$r(x) = \frac{1}{x}$
-3	
-2	
-1	
-0.5	
-0.25	
0	
0.25	
0.5	
1	
2	
3	

b. The range is

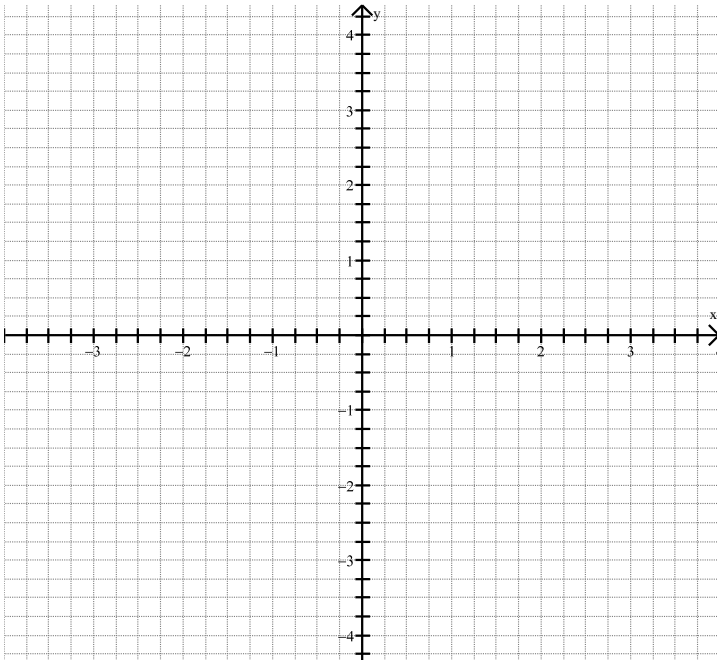
c. X – intercept is _____

d. Y – intercept is _____

Now, lets plot these ordered pairs in the grid given below and sketch its graph.

The line $x = a$, where a is a constant is called a vertical asymptote if $f(x) \rightarrow \pm\infty$ as $x \rightarrow a$ from the left, right, or both directions.

Hence the VA of $r(x) = \frac{1}{x}$ is $x = 0$



For problems 1 – 5, find the domain and write using interval notation.

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

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

3. $y = \frac{x-2}{5}$

4. $r(x) = \frac{x-2}{x^2+6x+8}$

5. $y = \frac{1}{x^2+16}$

For Problems 6 – 8, perform the indicated operation.

6. $\frac{x^2-4x-5}{x^2-3x-10}$

7. $\frac{y^2-3y}{y-1} \cdot \frac{y^2-1}{y^2-6y+9}$

8. $\frac{2y^2+6y}{y^2-4} \div \frac{3y+9}{y-2}$