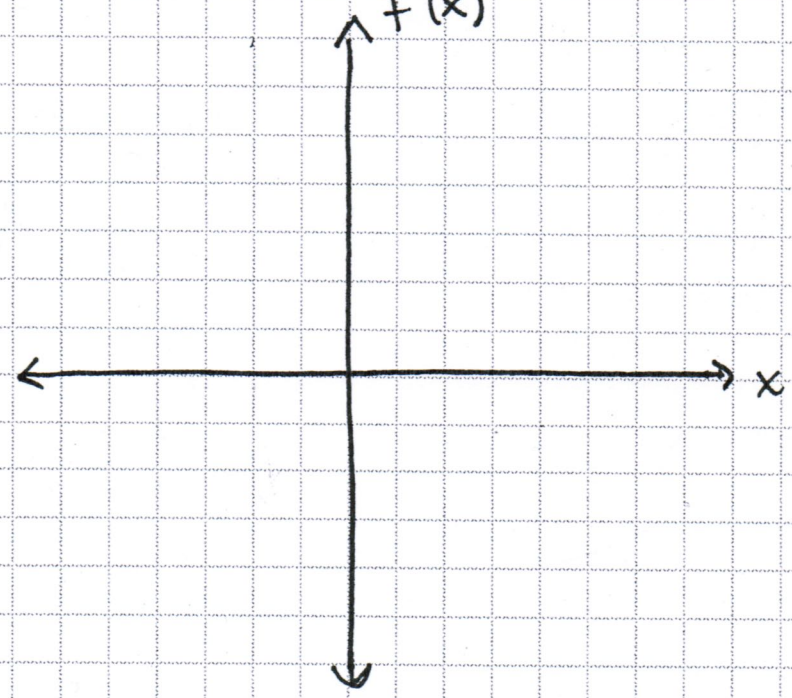
◎ I can graph $y = \frac{1}{x}$ and $\frac{1}{x^2}$ with flips/shifts and state Domain & Range

Graph:

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

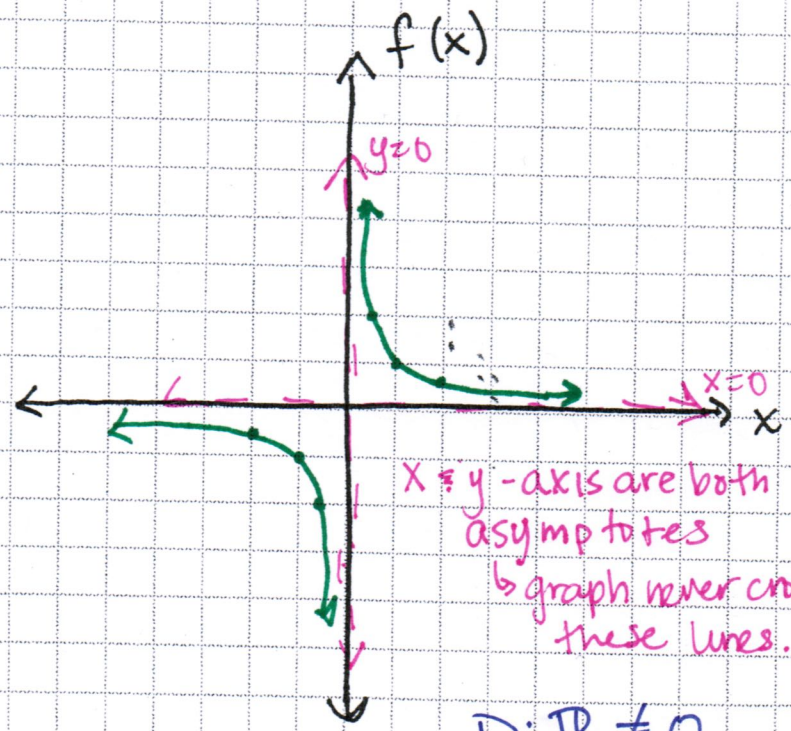
x	f(x)
-2	
-1	
-.5	
0	
.5	
1	
2	



Graph:

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

x	f(x)
-2	-1/2
-1	-1
-.5	-2
0	error
.5	2
1	1
2	1/2



x & y-axis are both asymptotes
↳ graph never crosses these lines.

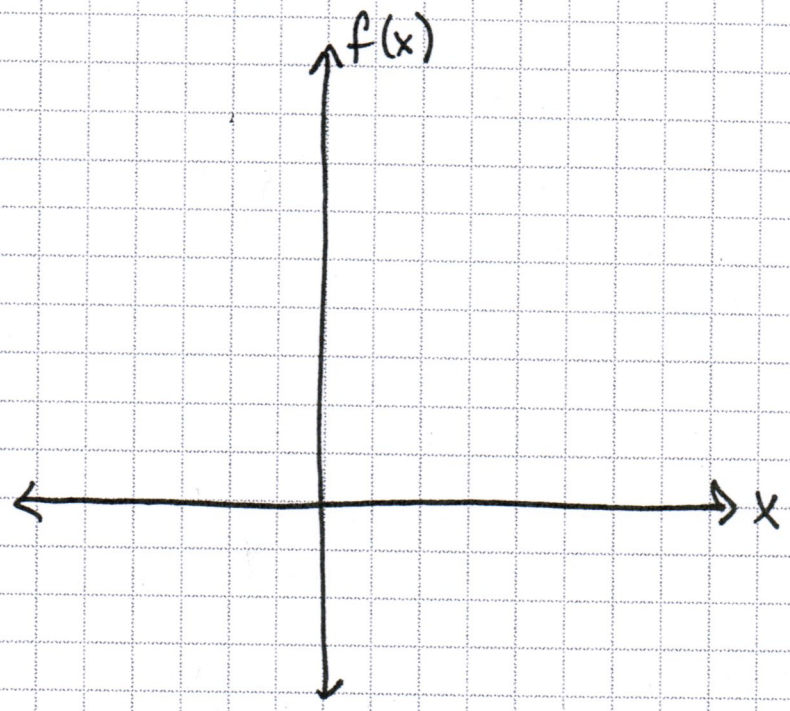
D: $\mathbb{R} \neq 0$

R: $\mathbb{R} \neq 0$

Graph

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

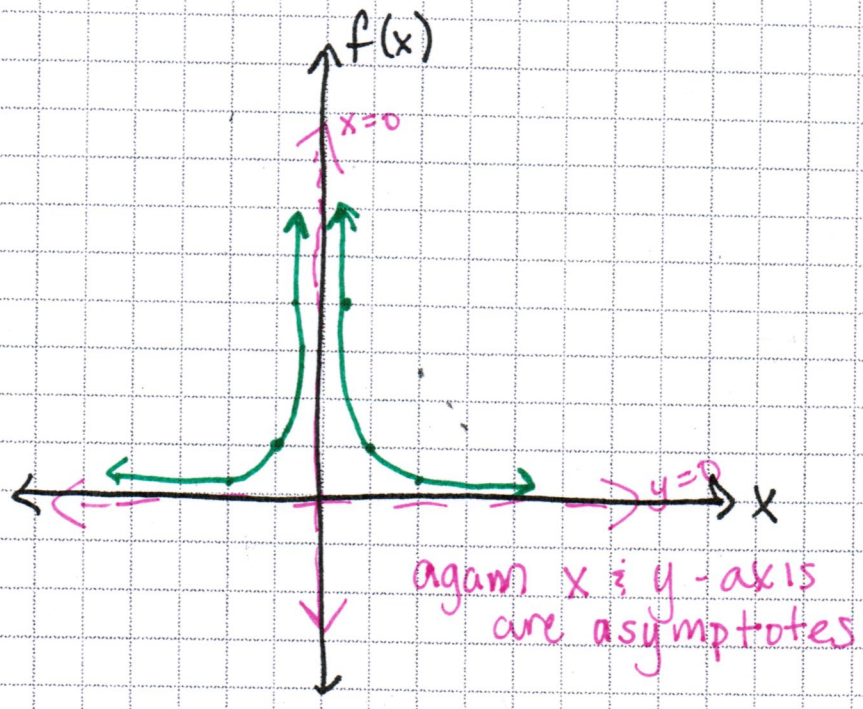
x	f(x)
-2	
-1	
-.5	
0	
.5	
1	
2	



Graph

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

x	f(x)
-2	1/4
-1	1
-.5	4
0	error
.5	4
1	1
2	1/4



D: $\mathbb{R} \neq 0$

R: $y > 0$

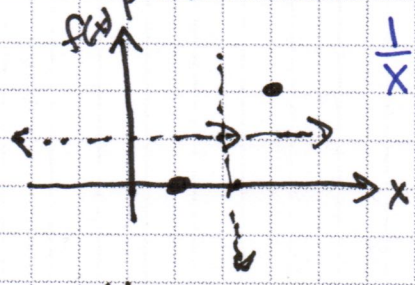
◎ Shifting $f(x)=\frac{1}{x}$ $f(x)=\frac{1}{x^2}$

$f(x) = \frac{1}{x}$ or $\frac{1}{x^2}$ $\Rightarrow$

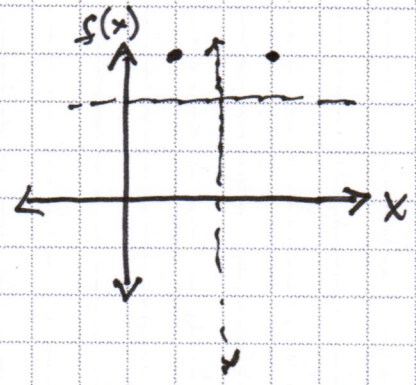
NOTES

① shift asymptotes
draw dotted lines for them.

② plot important points...



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

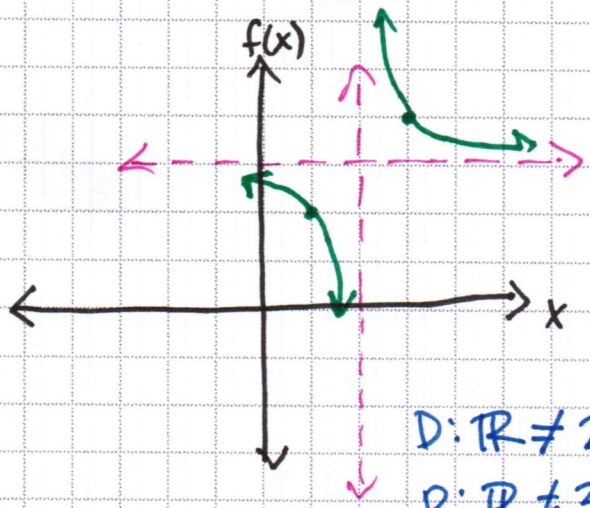


$\frac{1}{x^2} = f(x$

③ draw graph towards aysmptote through important points...

Ex1] $f(x) = \frac{1}{x-2} + 3$

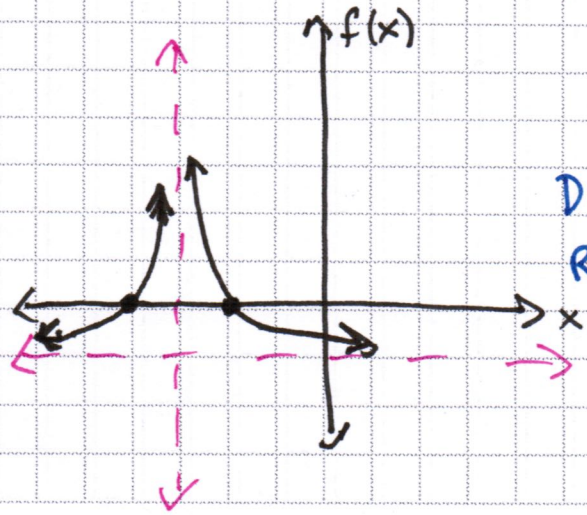
shifts 2 right 3up



D: $\mathbb{R} \neq 2$
R: $\mathbb{R} \neq 3$

Ex2] $f(x) = \frac{1}{(x+3)^2} - 1$

shifts 3Left 1down



D: $\mathbb{R} \neq -3$
R: $\mathbb{R} \geq -1$