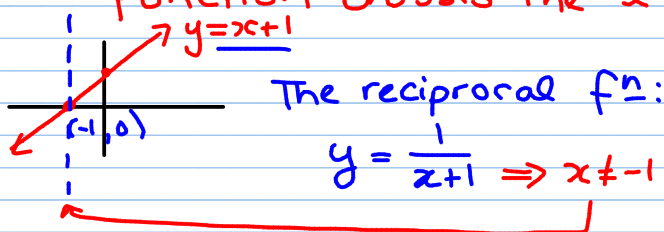


# Graphing Reciprocal functions:

- (1) • Asymptotes - are lines that we sketch in to help us find the shape of the curve.
  - They are NOT part of the graph which is why we always make them dotted
  - The curve will approach an asymptote but never touch or cross it.

★ • Draw in the asymptote(s) first! They occur wherever the original function crosses the x-axis ( $y=0$ )

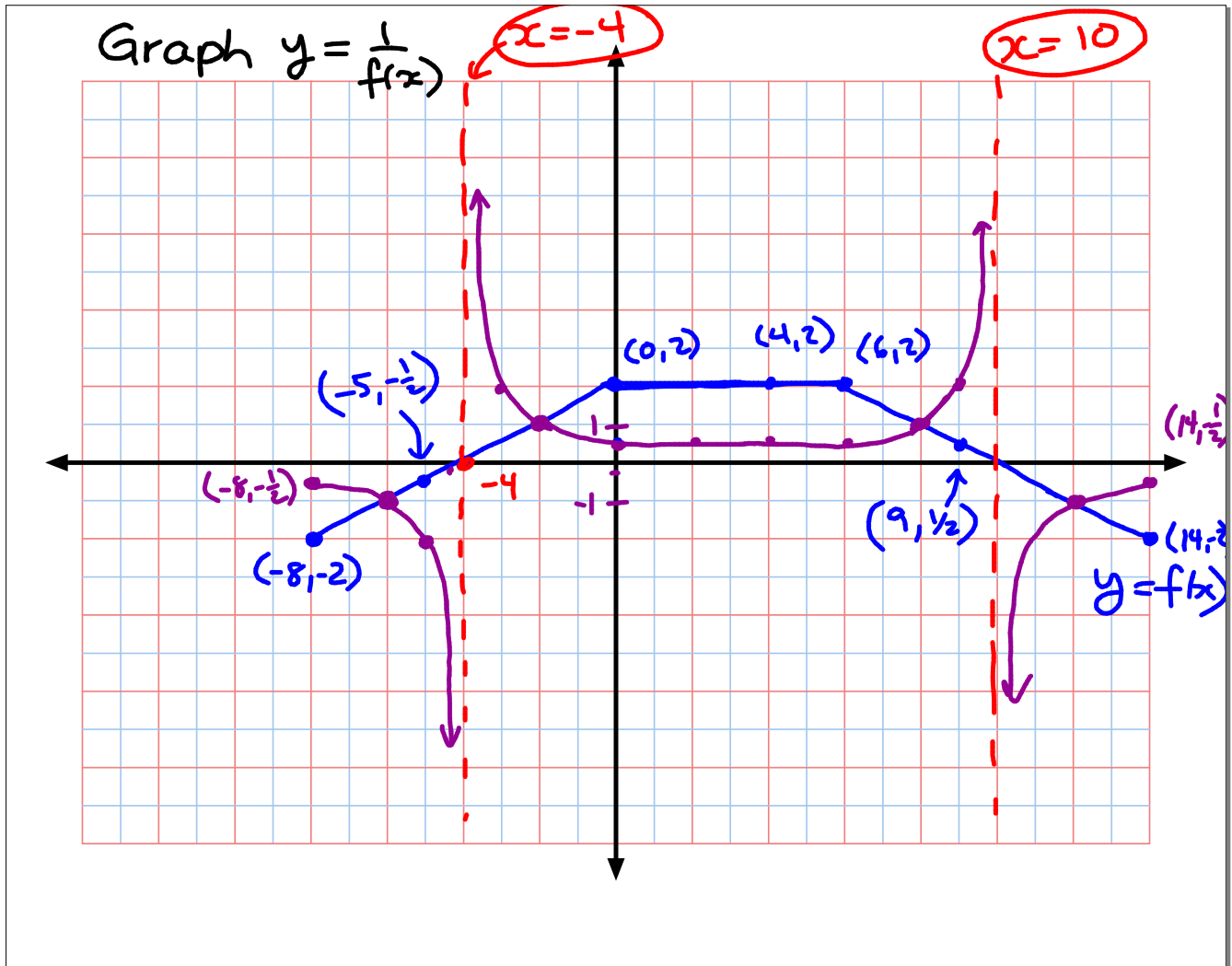


$$y = (x+3)(x-5) \Rightarrow y = \frac{1}{(x+3)(x-5)}$$

$x \neq -3, 5$   
 ↑  
 asymptotes.

- ★ • Put on any Invariant points (a point on the original curve AND the reciprocal), or when  $y=1$  or  $-1$
- ★ • Plot enough points to get the shape of the curve by FLIPPING the y-value.

<u>ORIG</u>		<u>RECIPROCAL</u>
$(1, 7)$	→	$(1, \frac{1}{7})$
$(3, 100)$	→	$(3, \frac{1}{100})$
Big #'s become tiny		
$(7, \frac{1}{1000})$	→	$(7, 1000)$
Tiny #'s become big!		



① Worksheet

② 7.4 pg. 403-405

# 1, 2, 3, 6

# 7 bc

# 8a

# 9