

Written assignments  
to hand in.

Discussion Problems  
From the department syllabus  
These are not to hand in.

Section 3.5

24, 32

due Friday 4/17

3.5 19-35 odd, 47-63 odd

WebAssign

Section 3.6

Due Monday 11/20 9pm

Section 3.6

52, 54

due Monday 11/20

Section 3.6

(43) Sketch the graph  $y = \frac{4x-4}{x+2}$  clearly label all  
① horizontal asymptotes, ② vertical asymptotes, ③ x- and ④ y-intercepts.

⑤ positive/negative behavior.

horizontal

$$y = \frac{4}{1} = 4$$

vertical asymptote

$$\begin{aligned} x+2 &= 0 \\ x &= -2 \end{aligned}$$

y-intercept

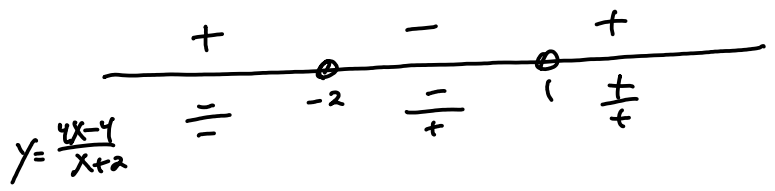
let  $x=0$

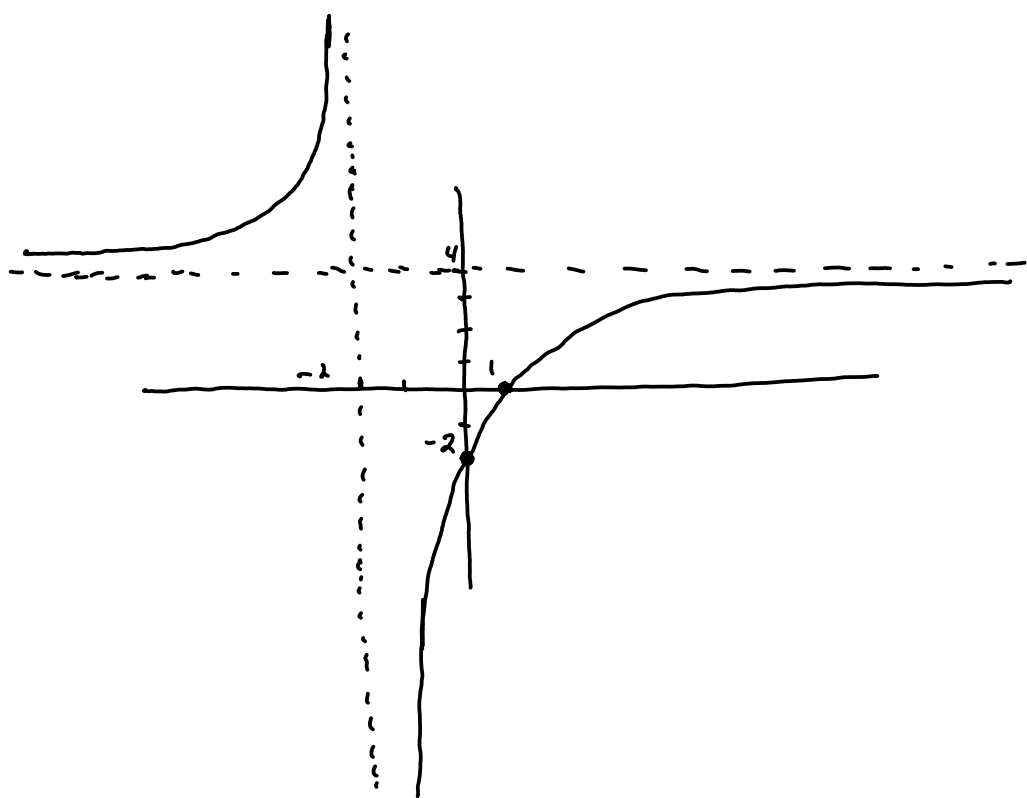
$$y = \frac{0-4}{0+2} = -2$$

x-intercepts

$$\begin{aligned} 4x-4 &= 0 \\ x &= 1 \end{aligned}$$

pos/neg





49 Sketch the graph  $y = \frac{4x-8}{(x-4)(x+1)}$  clearly label all horizontal asymptotes, vertical asymptotes, x- and y-intercepts.

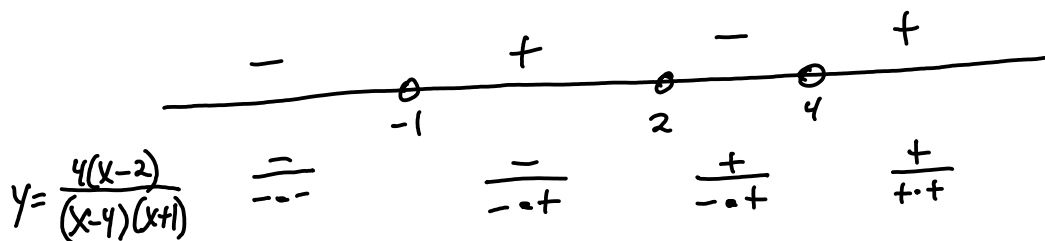
horizontal  
 $y = 0$  because  
degree 1  
degree 2

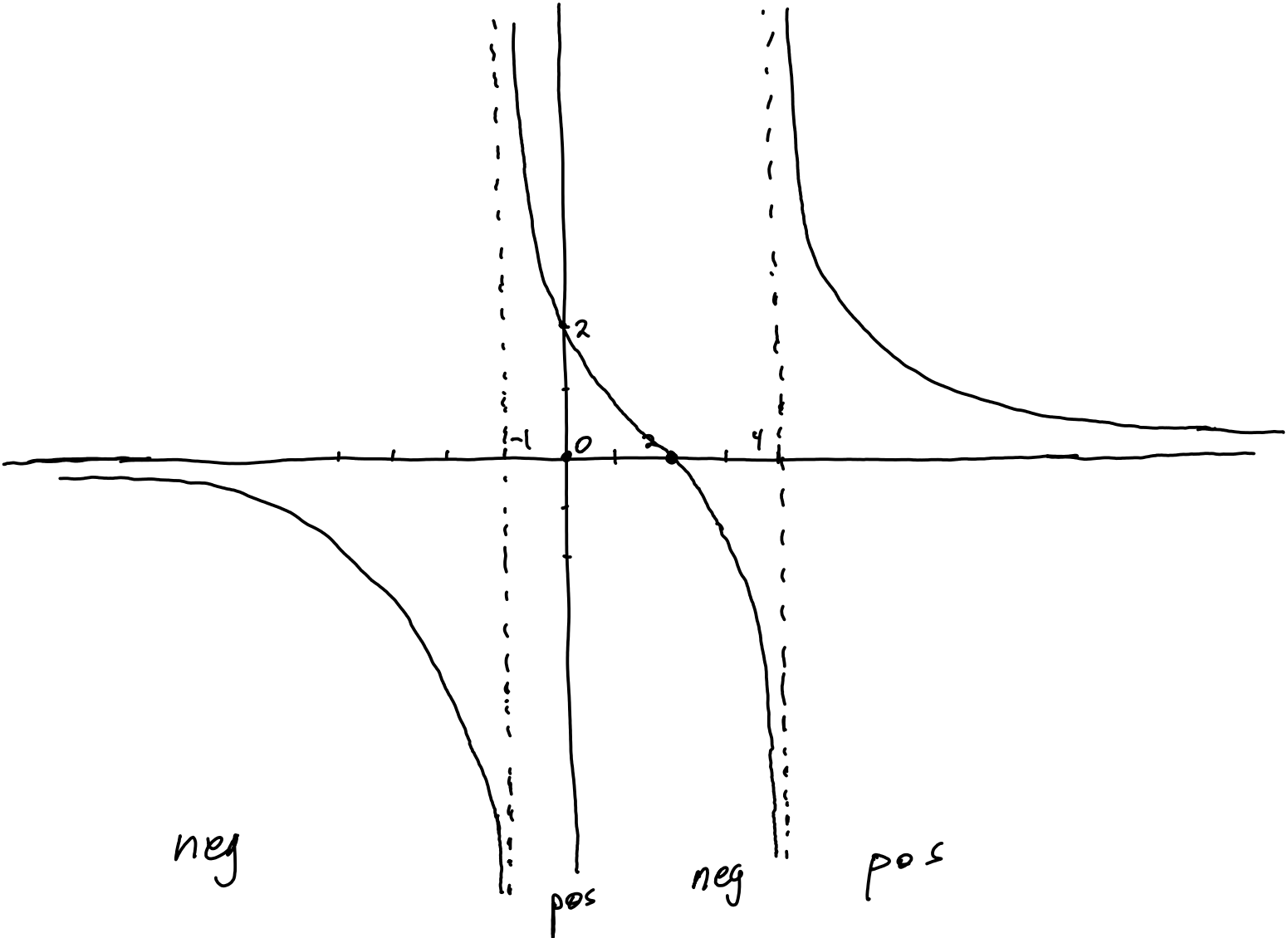
vertical  
 $(x-4)(x+1) = 0$   
 $x = 4$  and  $x = -1$

y-intercept  
 let  $x = 0$   
 $y = \frac{-8}{-4} = 2$

x-intercept  
 $4x - 8 = 0$   
 $x = 2$

pos/neg





neg

pos

neg

pos

(50) sketch graph  $y = \frac{6}{x^2 - 5x - 6} = \frac{6}{(x-6)(x+1)}$

horizontal  
 $y = 0$   
 because  
 $\frac{\text{degree } 0}{\text{degree } 2}$

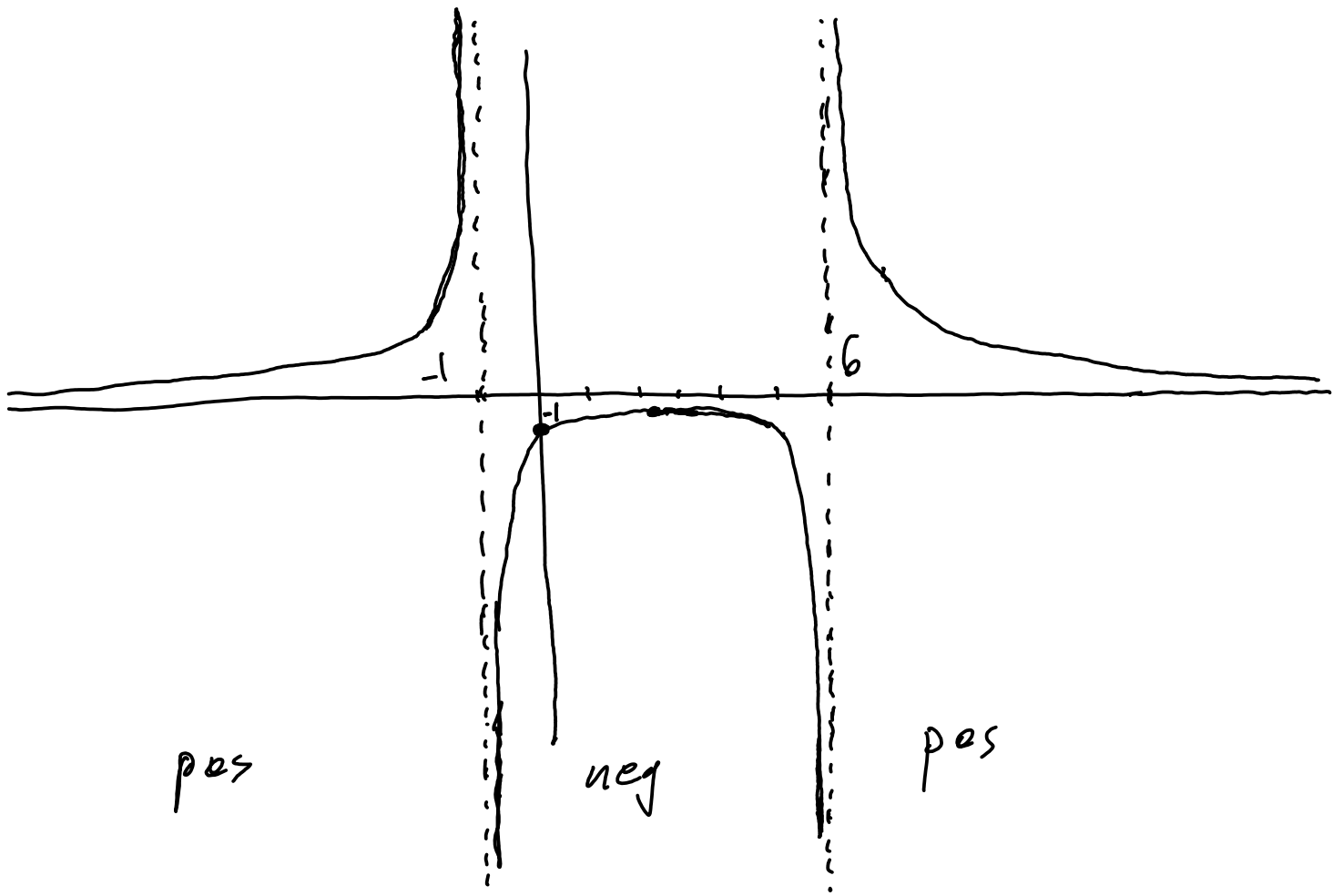
vertical  
 $(x-6)(x+1) = 0$   
 $x = 6, -1$

y-intercept  
 let  $x = 0$   
 $y = \frac{6}{-6 \cdot 1} = -1$

x-intercepts  
 numerator = 0  
 never.

pos/neg

+	-1	-	6	+
0	0	0	0	0
$\frac{6}{(x-6)(x+1)}$	$\frac{+}{- \cdot -}$	$\frac{+}{- \cdot +}$	$\frac{+}{+ \cdot +}$	$\frac{+}{+ \cdot +}$



example sketch the graph  $y = \frac{-x}{(x-1)^2}$

horizontal  
 $y = 0$

vertical  
 $(x-1)^2 = 0$   
 $x-1 = 0$   
 $x = 1$

y-intercept  
let  $x = 0$   
 $y = \frac{0}{(-1)^2} = 0$

x-intercept  
 $x = 0$

pos/neg

