Calculus AB

Curve Sketching

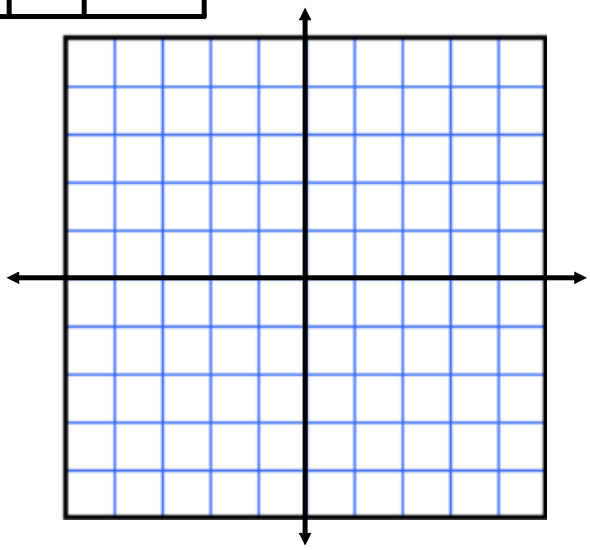
Supplement

Name: _____

Sketch a graph for the following information.

1)

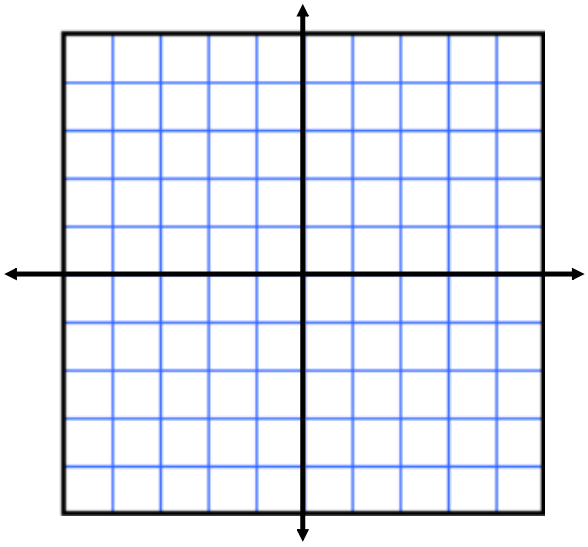
x	$(-\infty,-2)$	-2	$(-2,1)$	1	$(1,3)$	3	$(3,\infty)$
$f(x)$		0		−2		−4	
$f'(x)$	+	0	−	−	−	0	+
$f''(x)$	−	∅	−	0	+	+	+



2)

x	$(-\infty,-3)$	-3	$(-3,-1)$	-1	$(-1,0)$	0	$(0,1)$	1	$(1,3)$	3	$(3,\infty)$
$f(x)$		−2		−4		0		4		2	
$f'(x)$	−	−	−	0	+	+	+	0	−	−	−
$f''(x)$	−	0	+	+	+	0	−	−	−	0	+

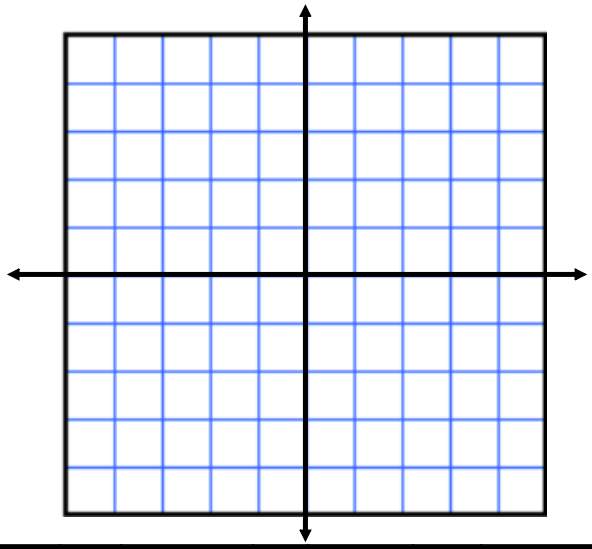
Given: Horizontal asymptotes at $y = \pm 1$



3)

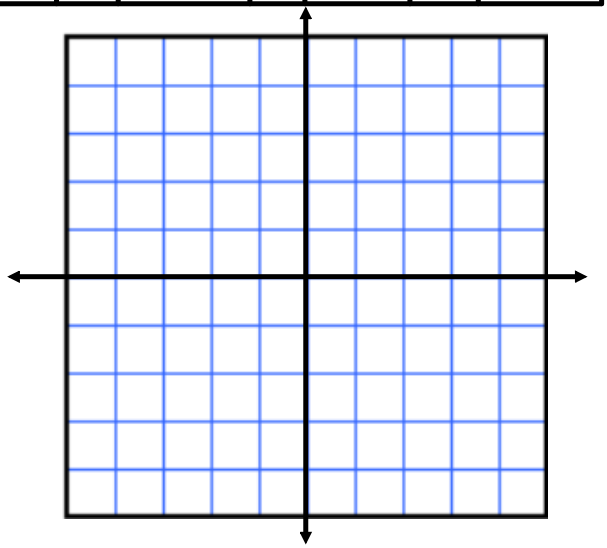
x	$(-\infty,-3)$	-3	$(-3,-2)$	-2	$(-2,0)$	0	$(0,2)$	2	$(2,3)$	3	$(3,\infty)$
$f(x)$		3		1		0		−1		-3	
$f'(x)$	+	0	−	−	−	0	−	−	−	0	+
$f''(x)$	−	−	−	0	+	0	−	0	+	+	+

Zeros: { -4, 0, 4 }



4)

x	$(-\infty,-4)$	-4	$(-4,-3)$	-3	$(-3,-1)$	-1	$(-1,1)$	1	$(1,3)$	3	$(3,\infty)$
$f(x)$		1		4		1		2		4	
$f'(x)$	−	0	+	∅	−	0	+	+	+	0	−
$f''(x)$	+	+	+	∅	+	+	+	0	−	−	−

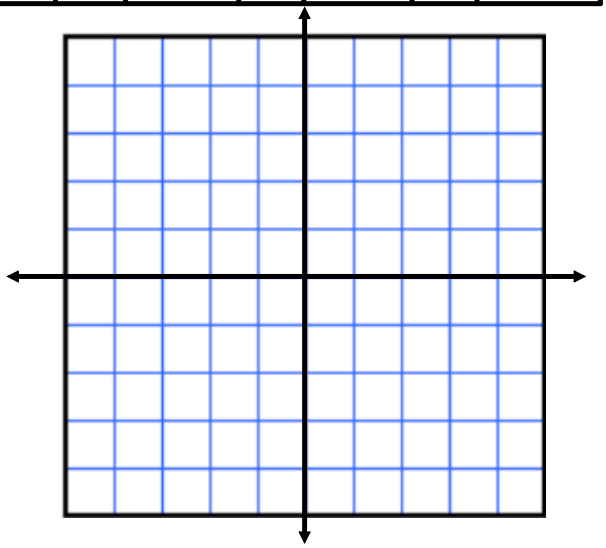


x-intercept : { 4 }

y-intercept : $(0,\frac{5}{4})$

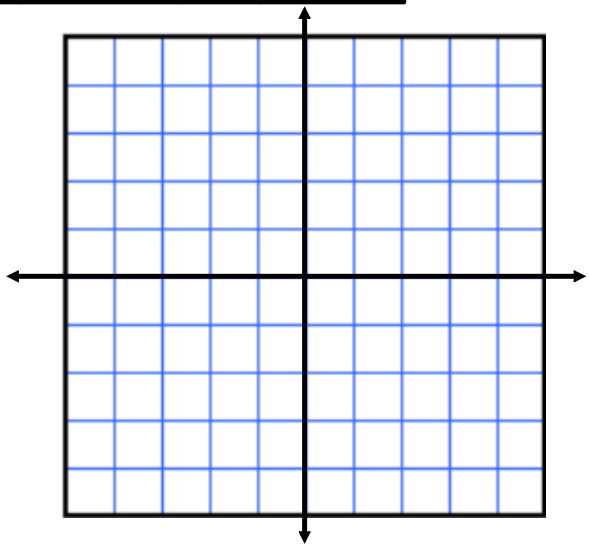
5)

x	$(-\infty,-4)$	-4	$(-4,-2)$	-2	$(-2,0)$	0	$(0,2)$	2	$(2,4)$	4	$(4,\infty)$
$f(x)$	-5	−5	−3	−3	−1	−1	1	1	3	3	5
$f'(x)$	0	∅	0	∅	0	∅	0	∅	0	∅	0
$f''(x)$	0	∅	0	∅	0	∅	0	∅	0	∅	0



6)

x	$(-\infty,-2)$	-2	$(-2,1)$	1	$(1,3)$	3	$(3,\infty)$
$f(x)$		4		0		−3	
$f'(x)$	−	∅	−	∅	−	∅	+
$f''(x)$	−	∅	−	∅	+	∅	+



x-intercept : { -4, 1}

$\lim_{x \to -2^-} f(x) =$ -3

$\lim_{x \to 3^-} f(x) =$ -4

$\lim_{x \to 3^+} f(x) = 2$