NAME: _____ BLOCK: _____ DATE: 2021

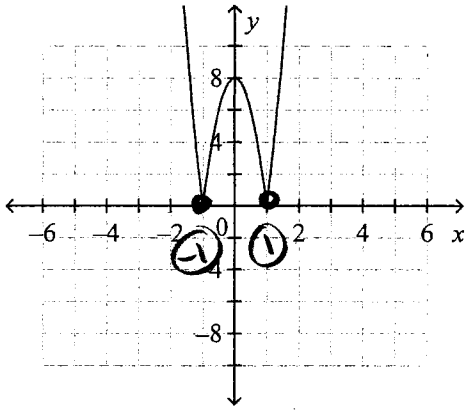
PRECALCULUS MATH 12 - CHAPTER 2 - PRETEST

signature

Multiple Choice

*CIRCLE the choice that **best** completes the statement or answers the question.*

1. Which absolute value function is represented by this graph?



a. $y = |-x^2 - 8|$ b. $y = |8x^2 - 8|$ c. $y = |8x^2 - 8x|$ d. $y = |8x - 8|$

$8(x^2 - 1)$

2. What are the domain and range of the reciprocal function $y = \frac{1}{-2x-4}$? D → $-2x - 4 \neq 0$, $-4 \neq 2y$, $-2 \neq x$

a. domain: $x \in \mathbb{R}, x \neq 0$
range $y \in \mathbb{R}, y \neq 2$

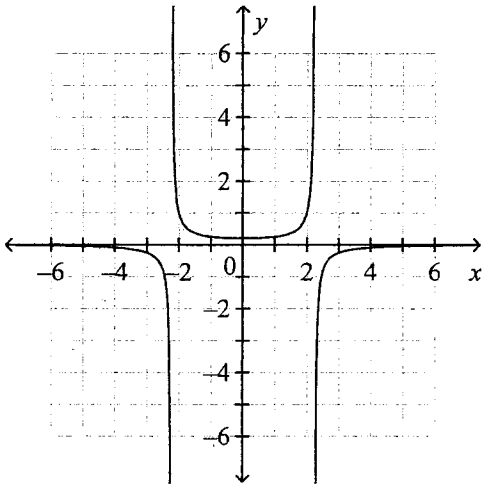
b. domain: $x \in \mathbb{R}, x \neq -2$
range $y \in \mathbb{R}, y \neq 0$

c. domain: $x \in \mathbb{R}, x \neq 2$
range $y \in \mathbb{R}, y \neq -2$

d. domain: $x \in \mathbb{R}, x \neq 4$
range $y \in \mathbb{R}, y \neq 0$

3. Which function is represented by the graph below?

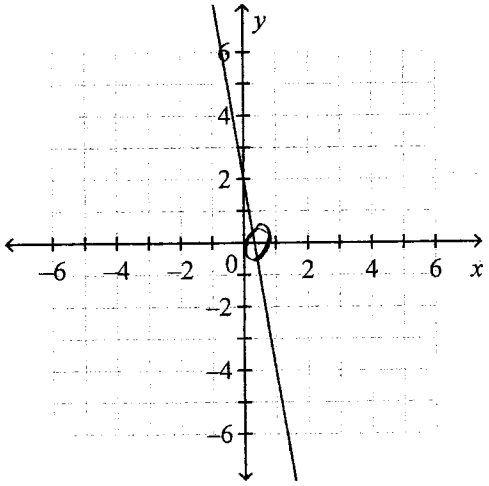
i) $y = -x^2 + 5$ ii) $y = -x^2 - 5$ iii) $y = \frac{1}{-x^2+5}$ iv) $y = \frac{1}{-x^2-5}$



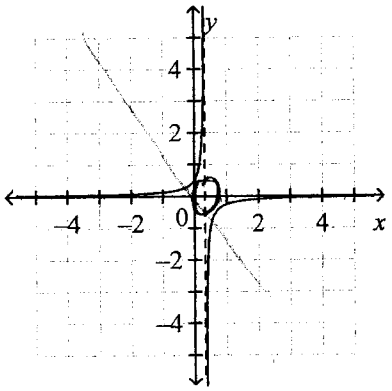
$-x^2 + 5 \neq 0$
$5 \neq x^2$
$\pm\sqrt{5} \neq x$

a. iv b. ii c. iii d. i

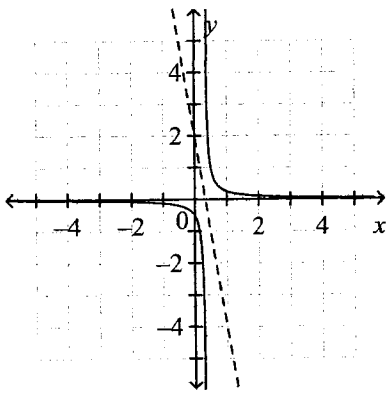
4. This is the graph of a linear function. Which graph below represents the reciprocal function and its asymptotes?



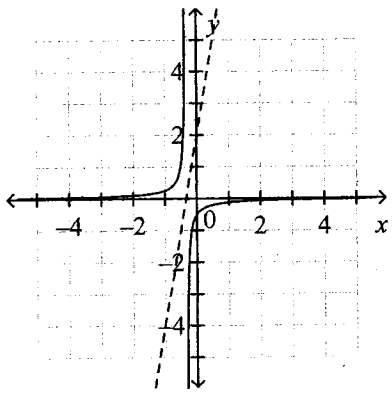
a.



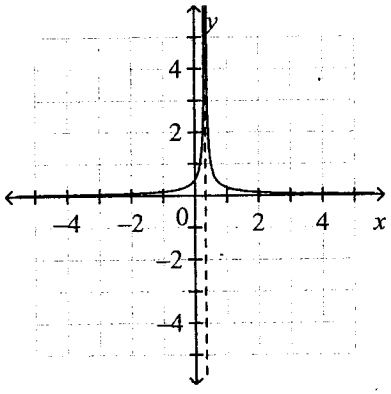
b.



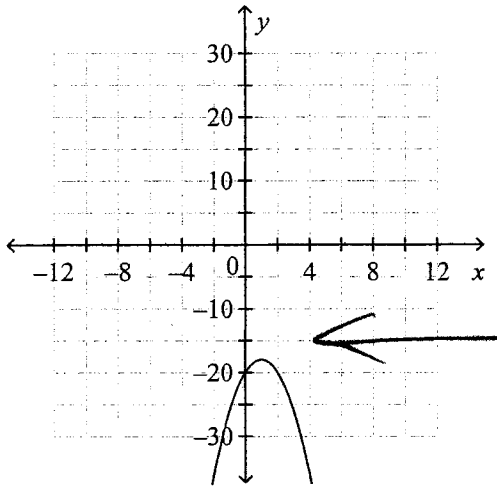
c.



d.



5. This is a graph of $y = -2(x-1)^2 - 18$. Identify the vertical asymptotes of the graph of the reciprocal function.



no x int

a. $y = 4$ and $y = -4$
b. $x = 4$ and $x = -2$
c. $x = 1$ and $x = 18$
d. no vertical asymptotes

6. What is the equation of the vertical asymptote of the graph of the reciprocal function $y = \frac{1}{-2x-6}$?

a. $y = -6$
b. $y = -3$
c. $x = -3$
d. $x = -6$

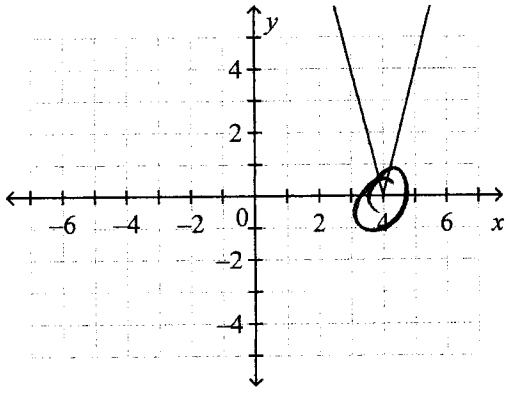
$-2x - 6 = 0$
$-2x = 6$
$x = -3$

7. Identify the vertical asymptotes of the graph of the reciprocal of the quadratic function $y = -2(x-3)^2$.

a. $x = 4$ and $x = 2$
b. $y = 4$ and $y = -4$
c. $x = 3$
d. no vertical asymptotes

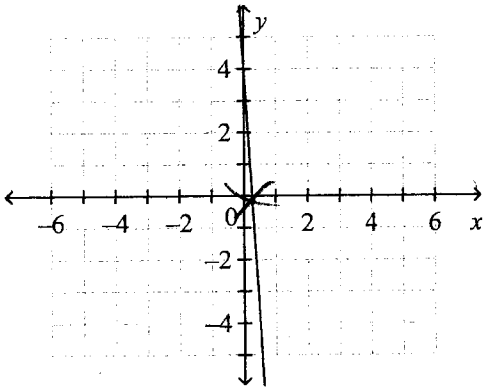
$-2(x-3)^2 = 0$
$(x-3)^2 = 0$
$x - 3 = 0$
$x = 3$

8. This is the graph of the absolute value of a linear function.

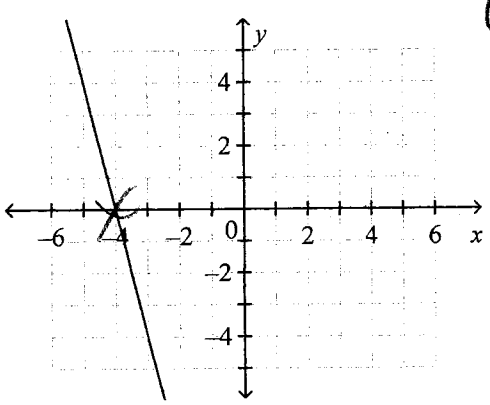


Which is the graph of the linear function?

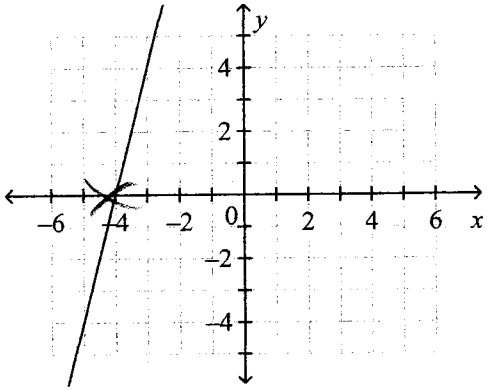
a.



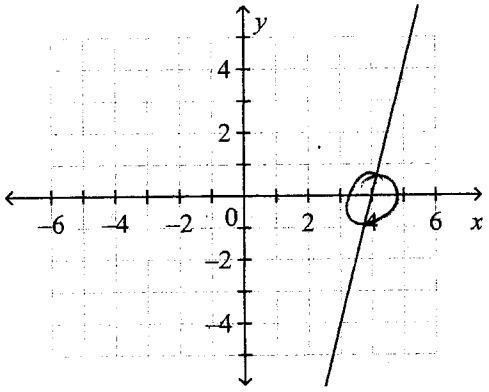
b.



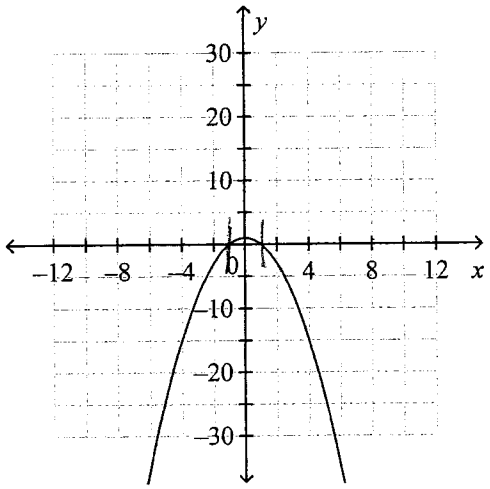
c.



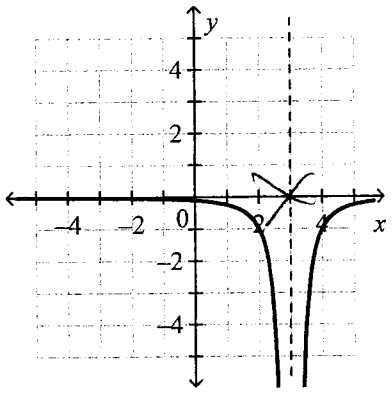
d.



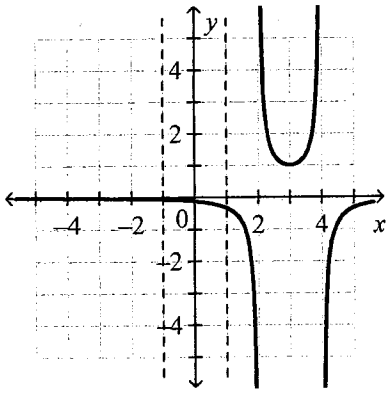
9. Here is the graph of $y = f(x)$. Which graph below is that of its reciprocal function?



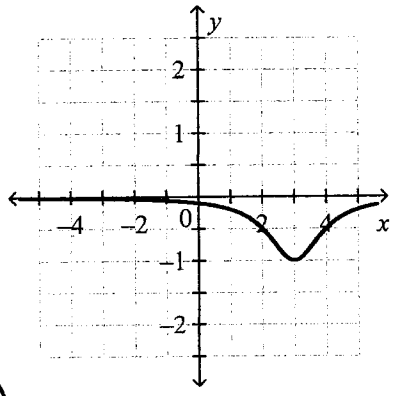
a.



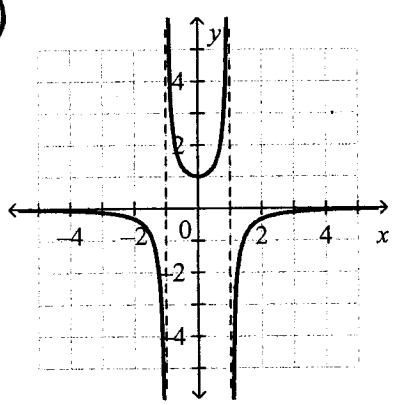
b.



c.



d.

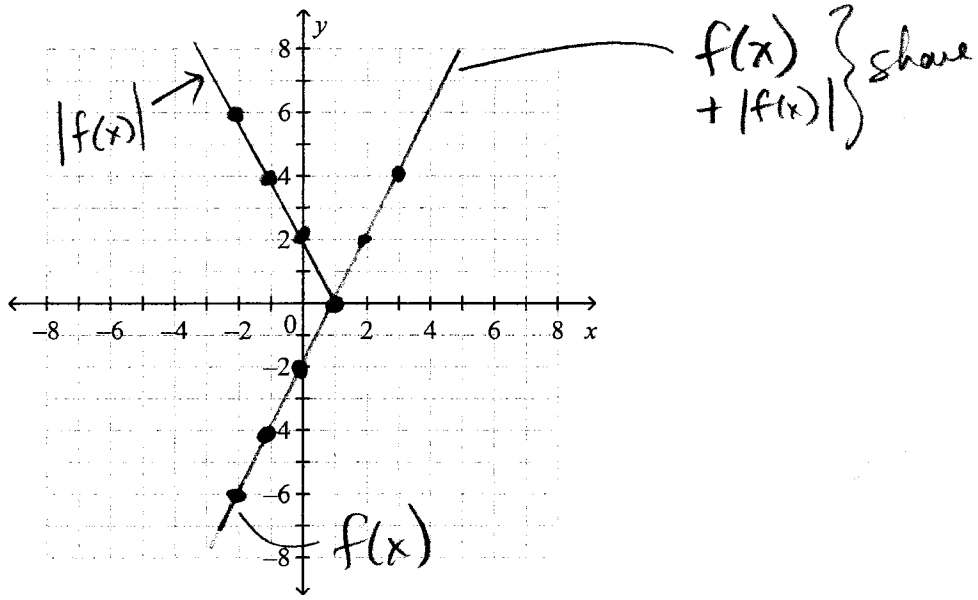


Name: _____ **PM12ch2p**

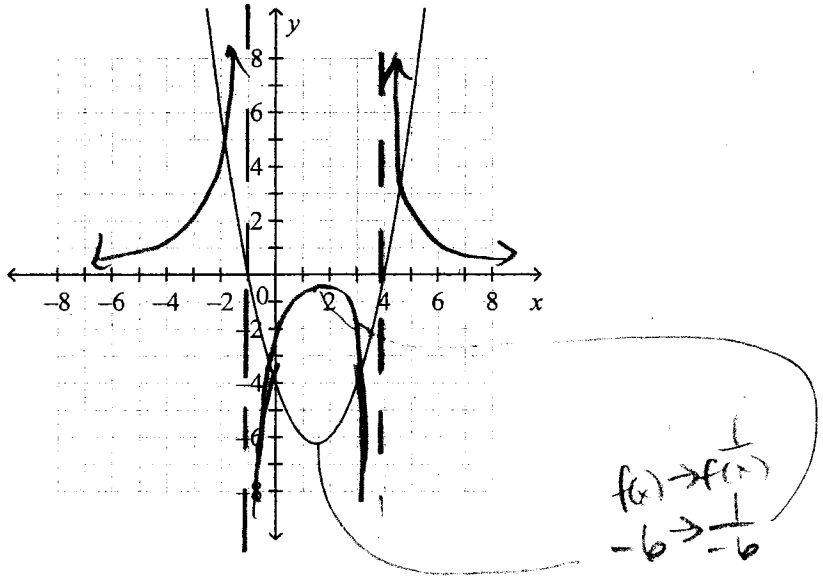
Problem - SHOW YOUR WORK

10. Complete this table of values, then **sketch and label** the graphs of $y = f(x)$ and $y = |f(x)|$ on the same grid.

x	–2	–1	0	1	2	3
$f(x) = 2x - 2$	–6	–4	–2	0	2	4
$y = \|2x - 2\|$	6	4	2	0	2	4

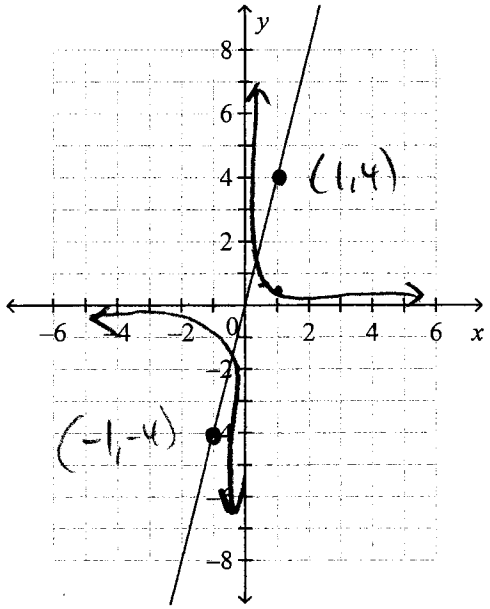


11. This is the graph of a quadratic function $y = f(x)$. Sketch a graph of the reciprocal function $y = \frac{1}{f(x)}$ and identify the vertical asymptotes and how they relate to the quadratic, if the asymptotes exist.



x	y	$\frac{1}{y}$
–2	6	1/6
0	–4	1/–4
1	–6	1/–6
2	–6	1/–6
3	–4	1/–4

12. Use the graph of $y = f(x)$ to sketch a graph of $y = \frac{1}{f(x)}$. Write the equation of the linear and reciprocal functions. Show your work.



work

Linear $y = mx + b$ (m: down, b: up, b = 0)

$m = \frac{\text{rise}}{\text{run}} = \frac{4-4}{1-1}$

$= \frac{8}{2}$

$= 4$

$y = 4x$

Linear Equation: $y = 4x$

Reciprocal Equation: $y = \frac{1}{4x}$