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← MAT2550, section ONL6FA_ONL6F, Summer 2 2021

Week 1 Math 2550 (Homework)

INSTRUCTOR
Bradford Thompson
South College

Current Score

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12
POINTS	3.33/3.33	3.33/3.33	-/3.33	-/3.33	-/3.33	-/3.33	-/3.33	-/3.33	-/3.33	-/3.33	-/3.33	-/3.33

4

TOTAL SCORE

6.66/100 6.7%

FRI, JUL 30, 2021
11:59 PM EDT

 Request Extension

 Description



Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by questions. You are required to use a new randomization after every 3 question submissions.

Assignment Scoring

Your best submission for each question part is used for your score.

The due date for this assignment has passed.

Your work can be viewed below, but no changes can be made.

Important! Before you view the answer key, decide whether or not you plan to request an extension. Your Instructor may not grant you an extension if you have viewed the answer key. Automatic extensions are not granted if you have viewed the answer key.

 Request Extension

 View Key

1. [3.33/3.33 Points]

PREVIOUS ANSWERS

LARPCALC10 1.4.011. 1/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Determine whether the equation represents y as a function of x .

$$x^2 + y^2 = 16$$

☐ Yes☒ No

Need Help?

Read It

2. [3.33/3.33 Points]

DETAILS

PREVIOUS ANSWERS

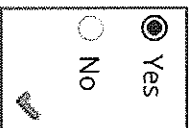
LARPCALC10 1.4.013. 1/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Determine whether the equation represents y as a function of x .

$$y = \sqrt{9 - x^2}$$

☒ Yes☐ No

Need Help?

Read It

3. [-/3.33 Points]

DETAILS

LARPCALC10 1.4.020. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the function value, if possible. (If an answer is undefined, enter UNDEFINED.)

$$V(r) = \frac{4}{3}\pi r^3$$

(a) $V(3)$ (b) $V\left(\frac{3}{2}\right)$ (c) $V(2r)$

Need Help?

4. [-/3.33 Points]

DETAILS

LARPCALC10 1.4.022. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the function value, if possible. (If an answer is undefined, enter UNDEFINED.)

$$h(t) = -t^2 + t + 1$$

(a) $h(2)$

(No Response)

(b) $h(-1)$

(No Response)

(c) $h(x + 1)$

(No Response)

Need Help?

Read It

Watch It

5. [-/3.33 Points]

DETAILS

LARPCALC10 1.4.025. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the function value, if possible. (If an answer is undefined, enter UNDEFINED.)

$$q(x) = \frac{1}{x^2 - 9}$$

(a) $q(0)$

(No Response)

(b) $q(3)$

(No Response)

(c) $q(y + 3)$

(No Response)

Need Help?

Read It

6. [-/3.33 Points]

DETAILS

LARPCALC10 1.4.028. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the function value, if possible. (If an answer is undefined, enter UNDEFINED.)

$$f(x) = |x| + 4$$

(a) $f(2)$

(No Response)

(b) $f(-2)$

(No Response)

(c) $f(x^2)$

(No Response)

Need Help?

Read It

Watch It

7. [-/3.33 Points]

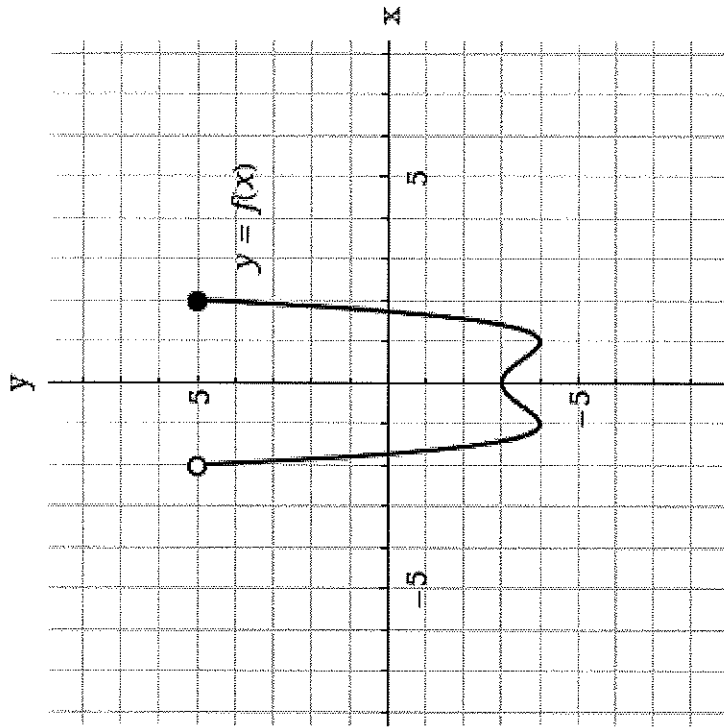
DETAILS

LARPCALC10 1.5.007. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Use the graph of the function to find the domain and range of f . (Enter your answers using interval notation.)



domain

range

Use the graph to find the indicated function values.

(a) $f(-1) =$

(b) $f(0) =$

(c) $f(1) =$

(d) $f(2) =$

Need Help?

8. [-/3.33 Points]

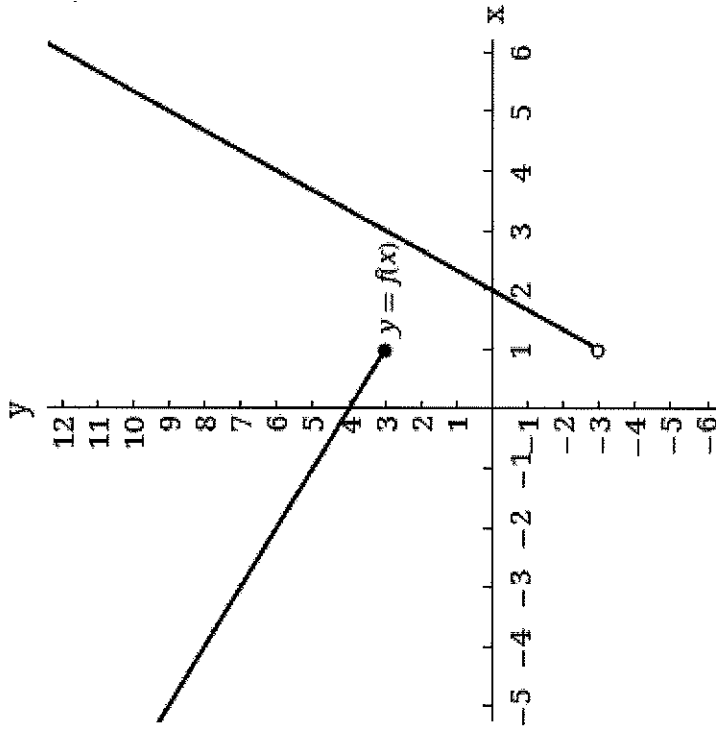
DETAILS

LARPCALC10 1.5.009. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Use the graph of the function to find the domain and range of f . (Enter your answer using interval notation.)



domain

(No Response)

range

(No Response)

Use the graph to find the indicated function values.

(a)

$f(2) =$ (No Response)

(b)

$f(1) =$ (No Response)

(c)

$f(3) =$ (No Response)

(d) $f(-1) =$ (No Response)

Need Help? Read It

9. [-/3.33 Points]

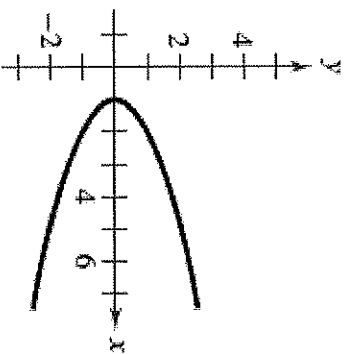
DETAILS

LARPCALC10 1.5.012. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Use the Vertical Line Test to determine whether the graph represents y as a function of x .



- ☐ Yes, y is a function of x .
- ☐ No, y is not a function of x .

Need Help?

Read It

Watch It

10. [-/3.33 Points]

DETAILS

LARPCALC10 1.5.017. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the zeros of the function algebraically. (Enter your answers as a comma-separated list.)

$$f(x) = 2x^2 - 3x - 54$$

x =

Need Help?

Read It

11. [-/3.33 Points]

DETAILS

LARPCALC10 1.5.019. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the zeros of the function algebraically. (Enter your answers as a comma-separated list.)

$$f(x) = \frac{x + 7}{2x^2 - 14}$$

x =

Need Help?

Read It

12. [-/3.33 Points]

DETAILS

LARPCALC10 1.5.021. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the zeros of the function algebraically. (Enter your answers as a comma-separated list.)

$$f(x) = \frac{1}{5}x^3 - 3x$$

x =

Need Help?

Read It

13. [-/3.33 Points]

DETAILS

LARPCALC10 1.7.004. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Match each function h with the transformation it represents, where $c > 0$.

- (a) $h(x) = f(x) + c$
- ☐ a horizontal shift of f , c units to the right
 - ☐ a vertical shift of f , c units down
 - ☐ a horizontal shift of f , c units to the left
 - ☐ a vertical shift of f , c units up
- (b) $h(x) = f(x) - c$
- ☐ a horizontal shift of f , c units to the right
 - ☐ a vertical shift of f , c units down
 - ☐ a horizontal shift of f , c units to the left
 - ☐ a vertical shift of f , c units up
- (c) $h(x) = f(x + c)$
- ☐ a horizontal shift of f , c units to the right
 - ☐ a vertical shift of f , c units down
 - ☐ a horizontal shift of f , c units to the left
 - ☐ a vertical shift of f , c units up
- (d) $h(x) = f(x - c)$
- ☐ a horizontal shift of f , c units to the right
 - ☐ a vertical shift of f , c units down

- ☐ a horizontal shift of f , c units to the left
- ☐ a vertical shift of f , c units up

Need Help?

Read It

Watch It

14. [-/3.33 Points]

DETAILS

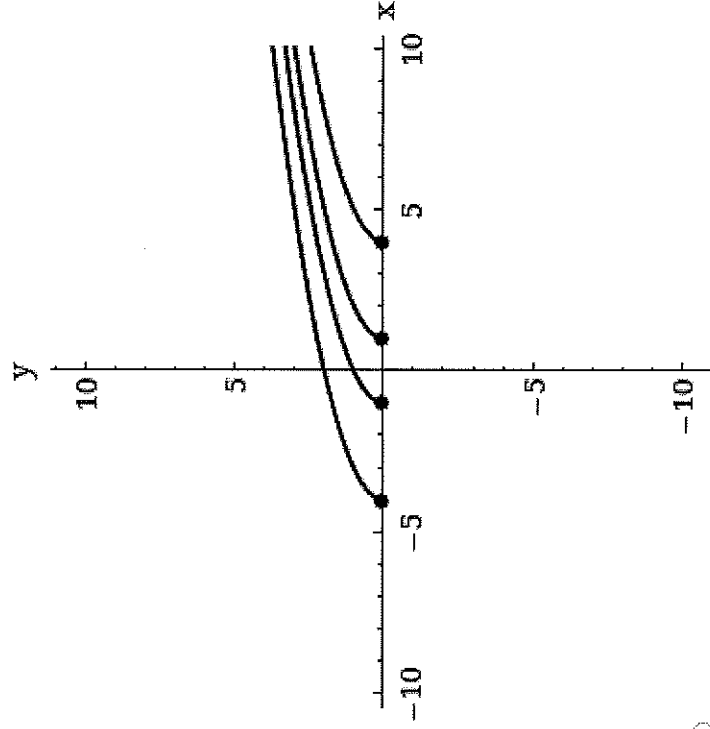
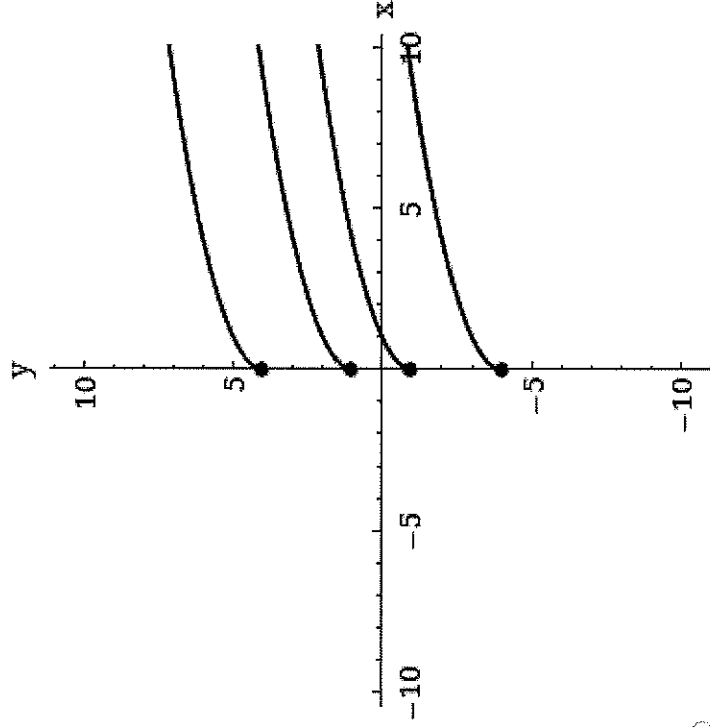
LARPCALC10 1.7.006. 0/15 Submissions Used

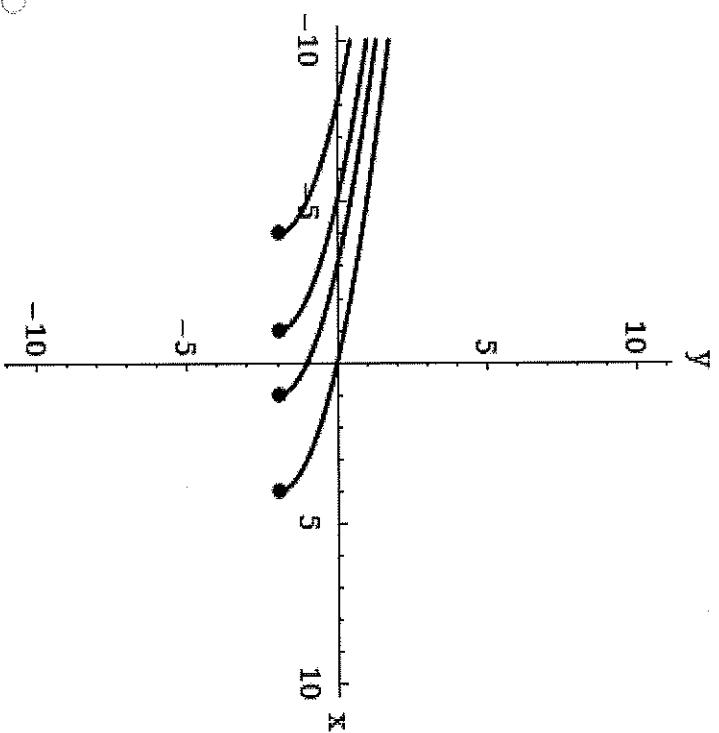
MY NOTES

ASK YOUR TEACHER

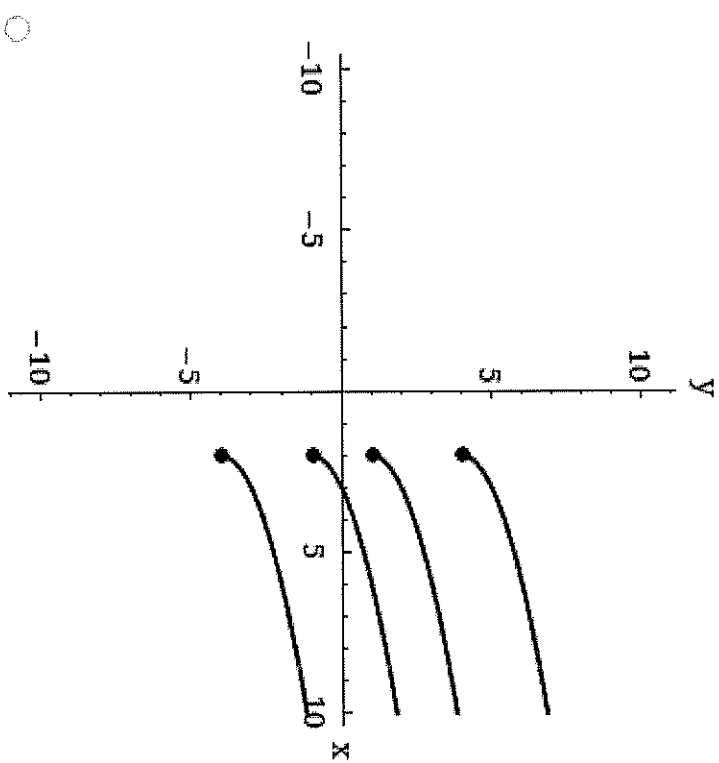
For each function, sketch the graphs of the function when $c = -4, -1, 1,$ and 4 on the same set of coordinate axes

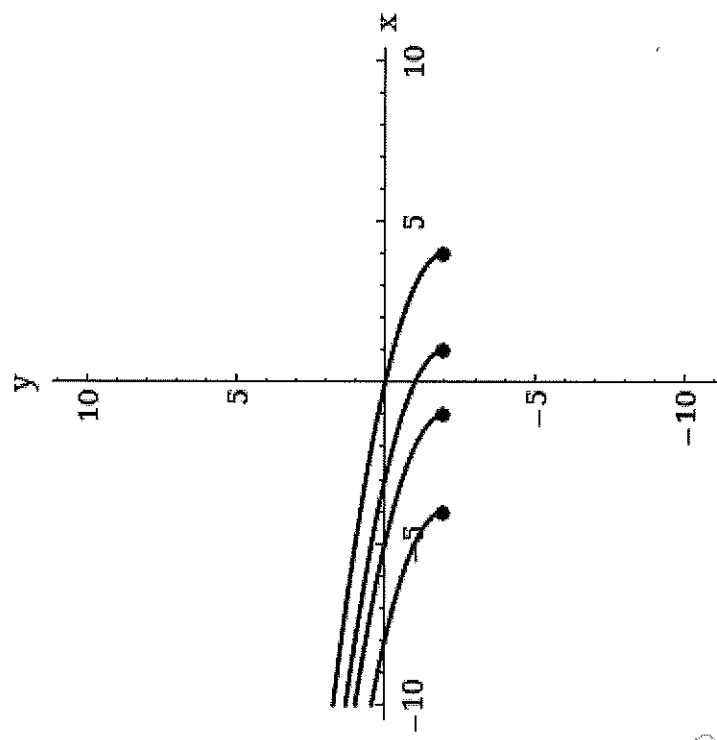
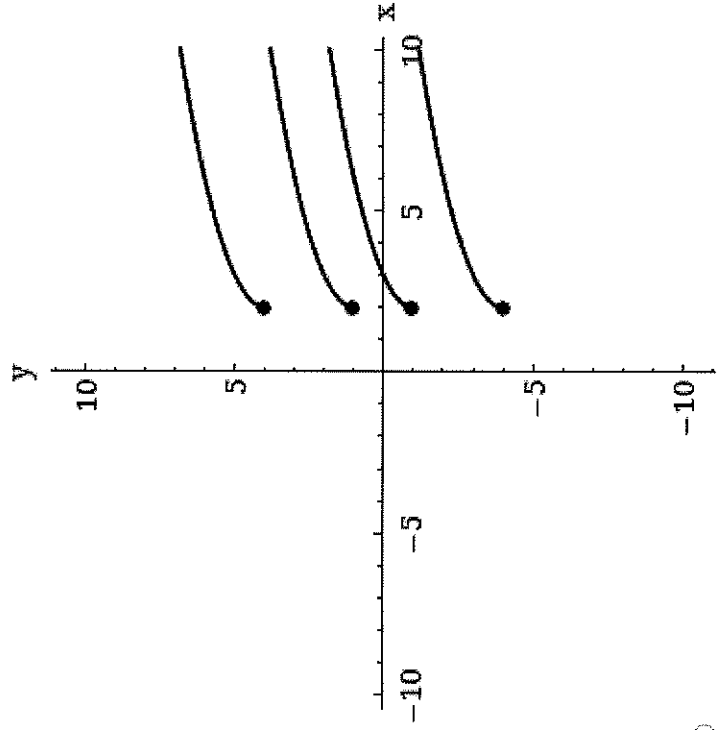
(a) $f(x) = \sqrt{x} + c$

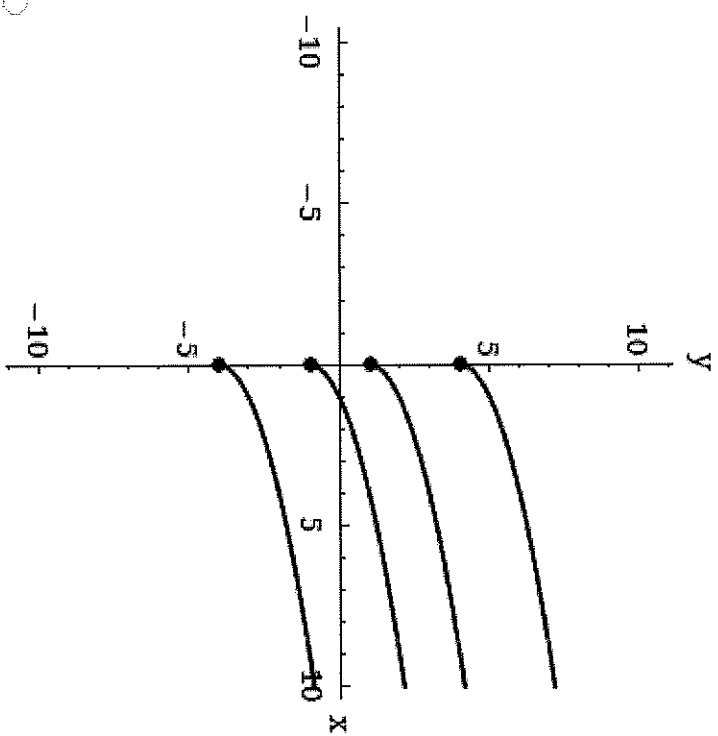
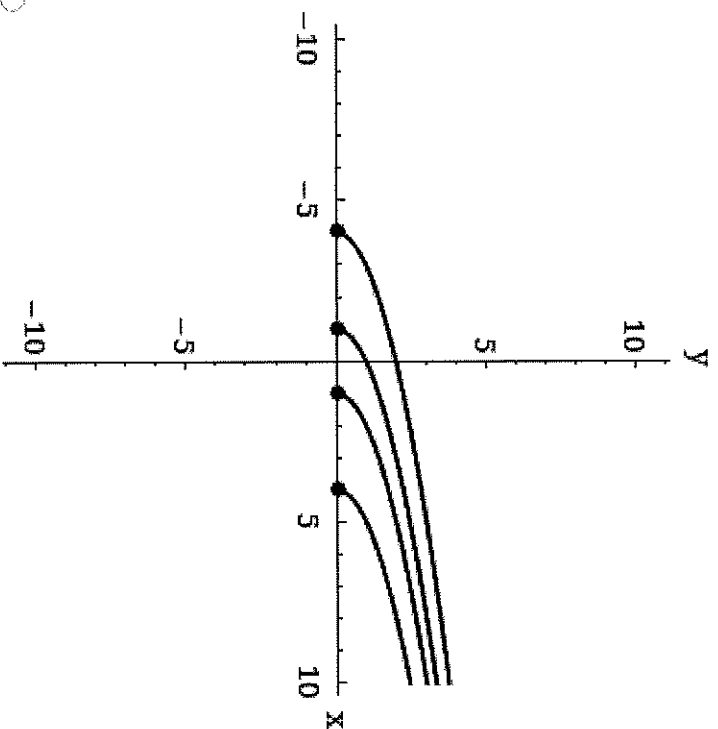




(b) $f(x) = \sqrt{x - c}$







Need Help?

Read it

Watch it

15. [-/3.33 Points]

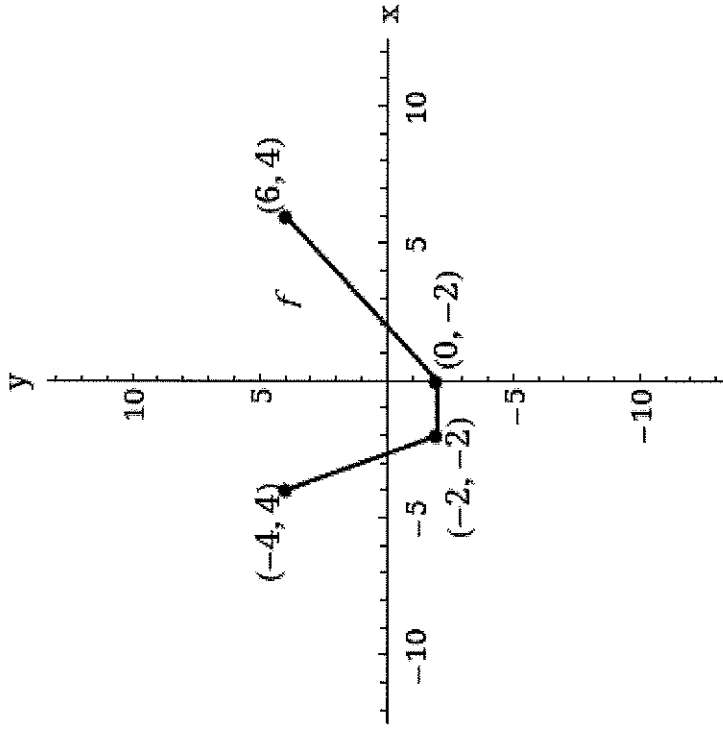
DETAILS

LARPCALC10 1.7.009. 0/15 Submissions Used

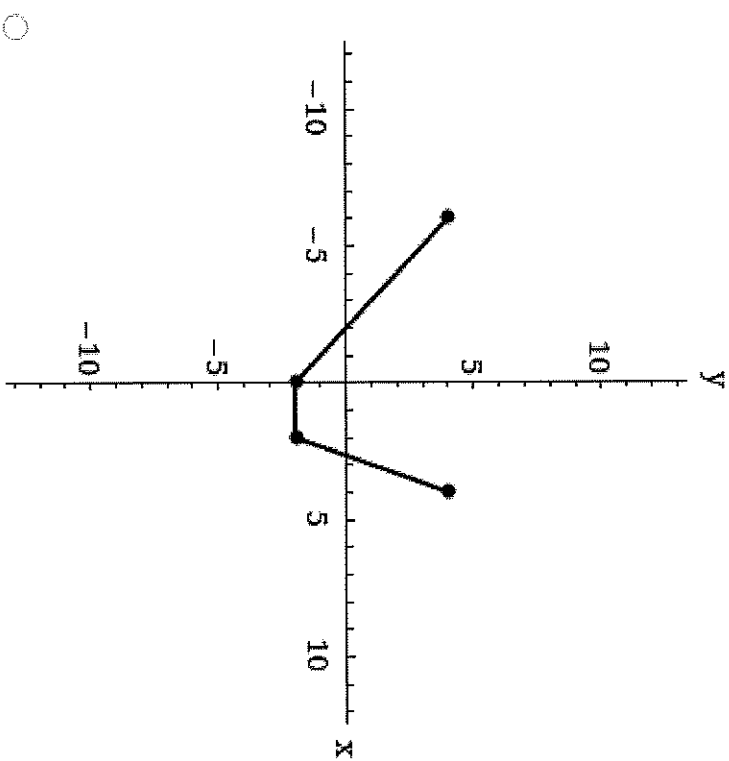
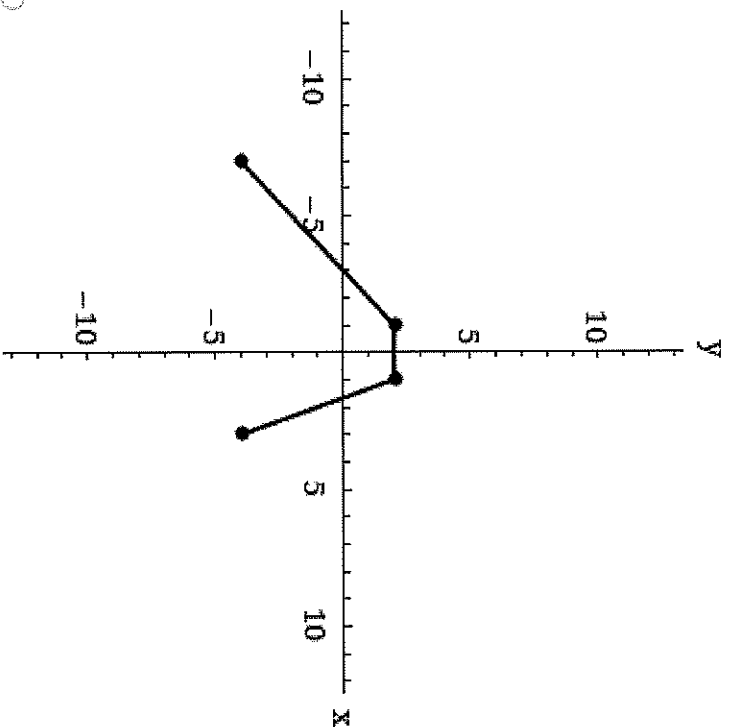
MY NOTES

ASK YOUR TEACHER

Use the graph of f to sketch each graph.

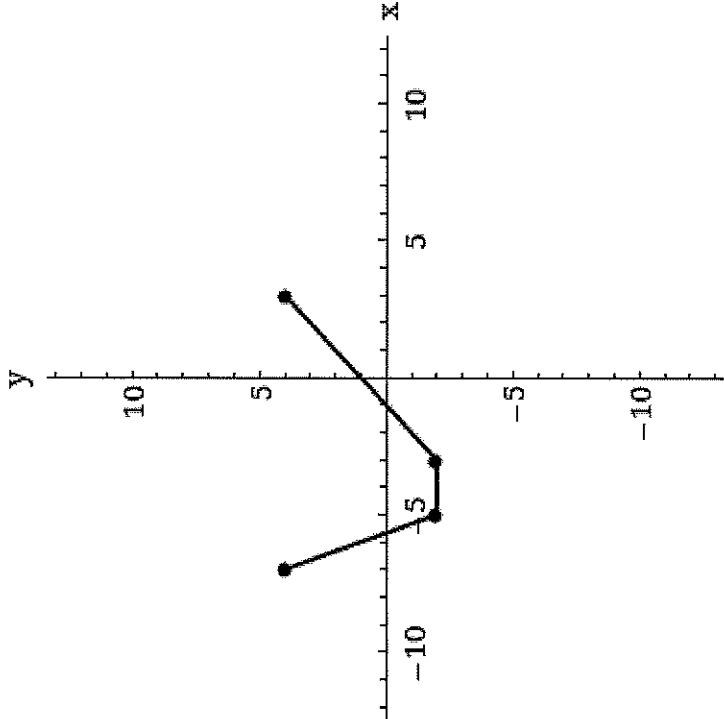


(a) $y = f(-x)$



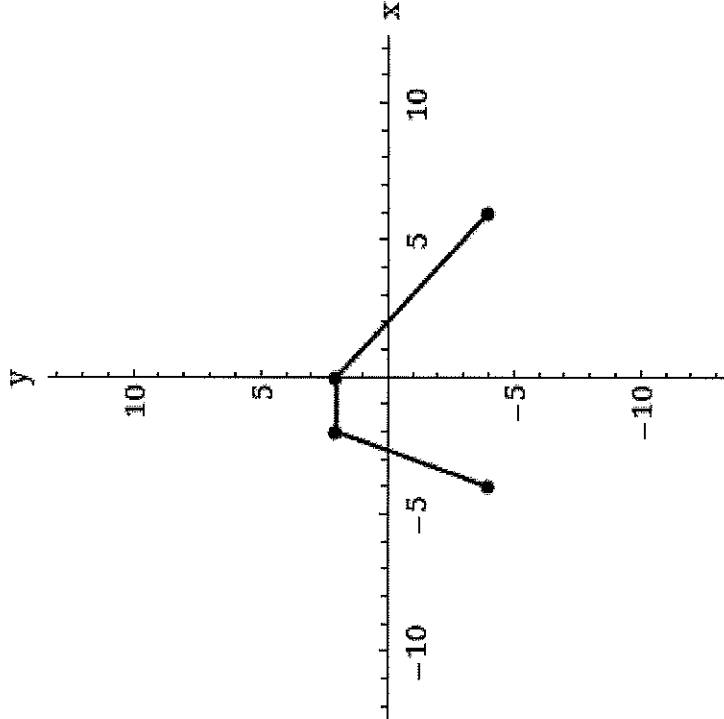
○

○

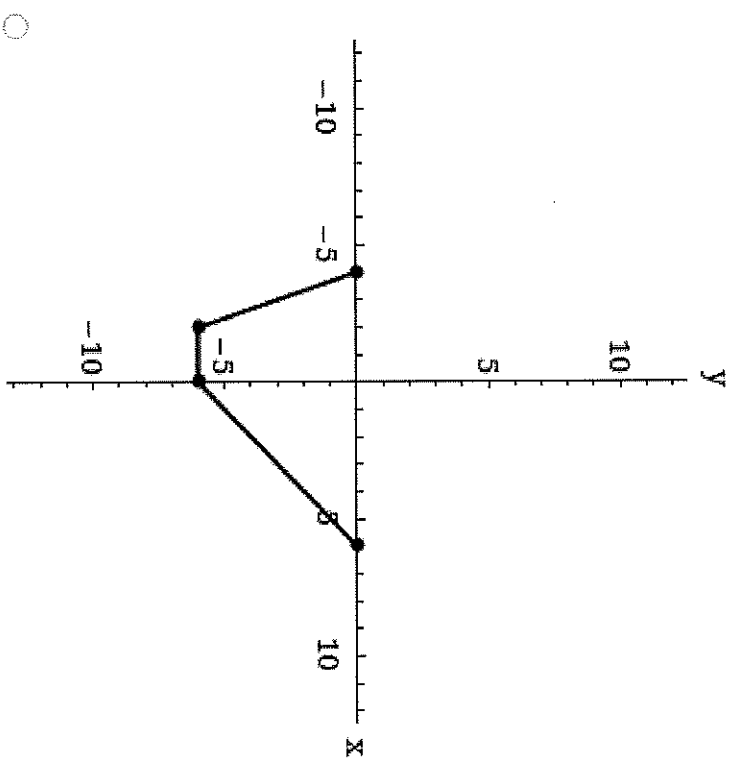
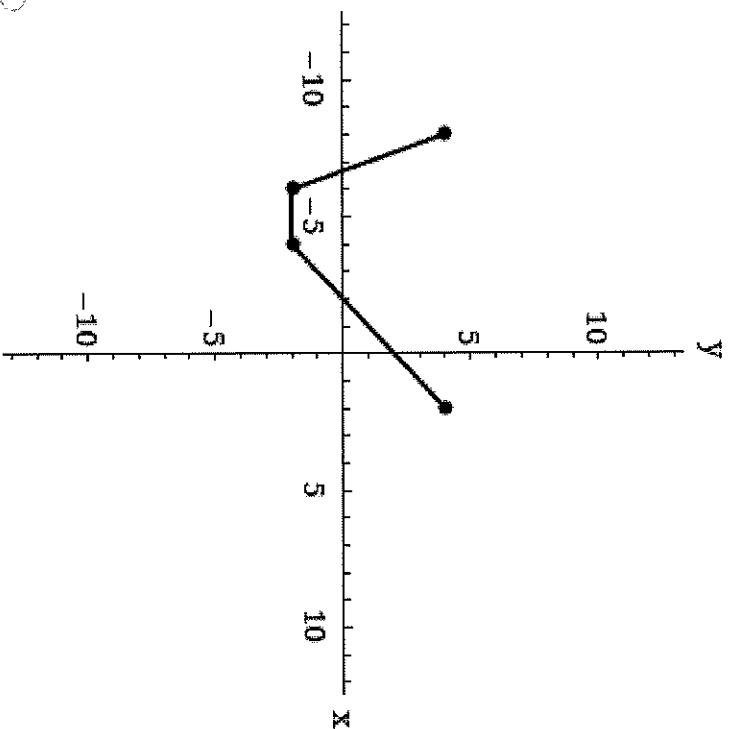


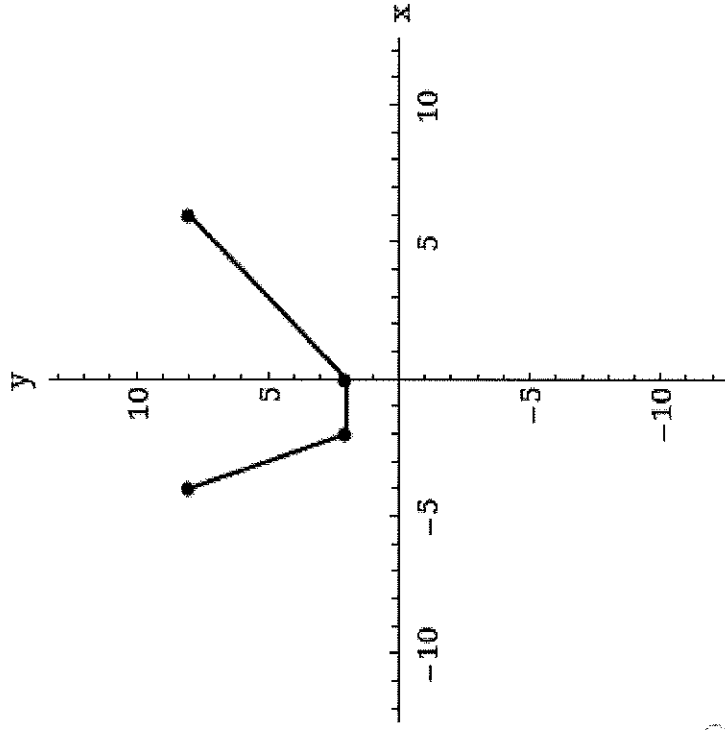
☐

(b) $y = f(x) + 4$

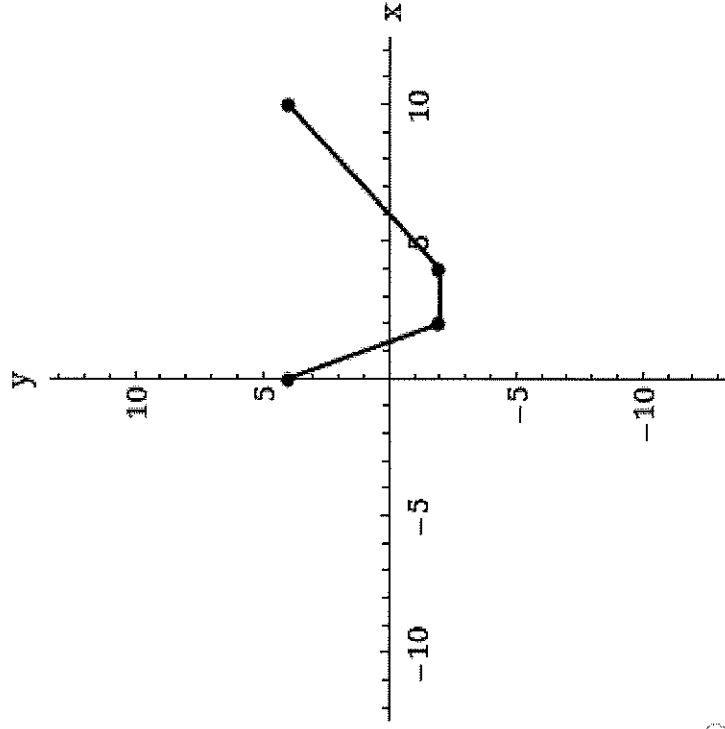


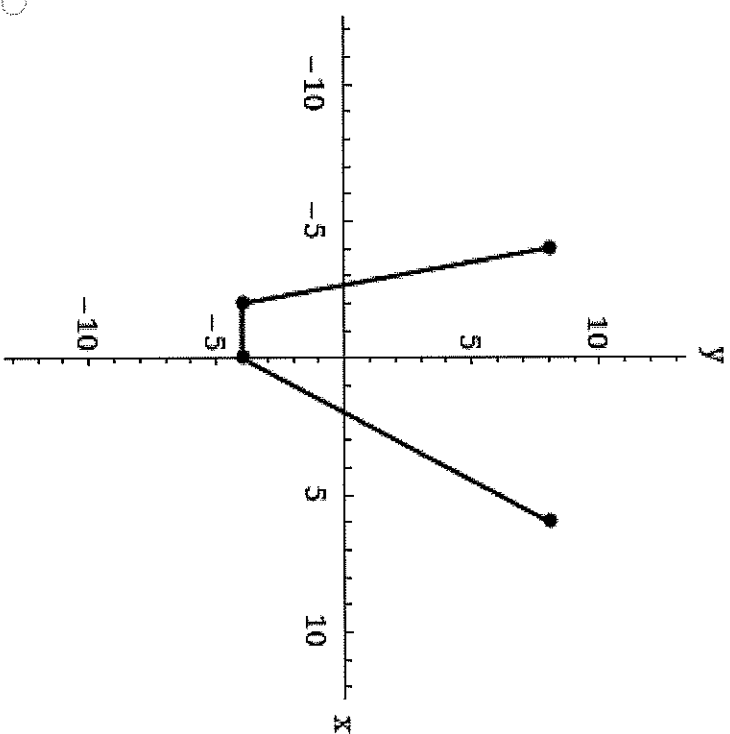
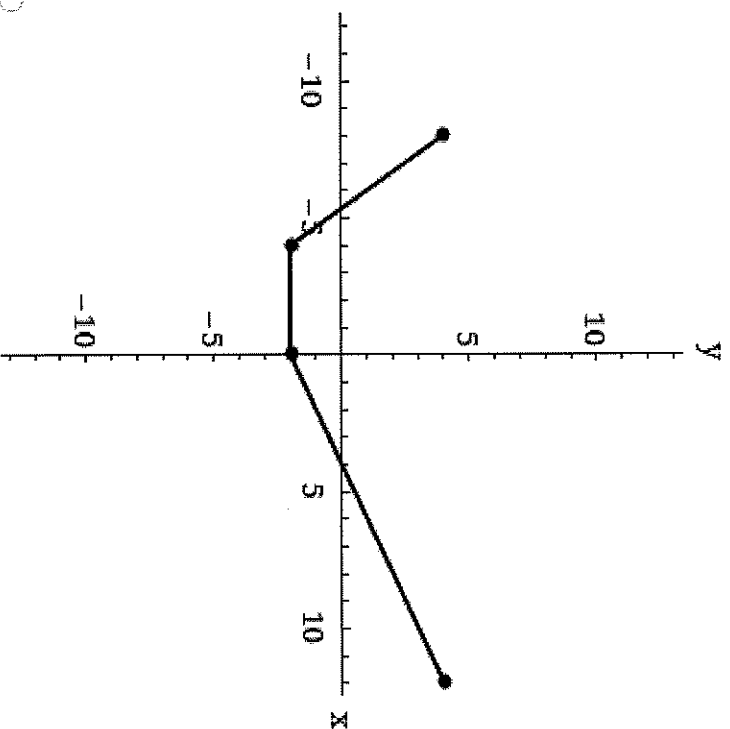
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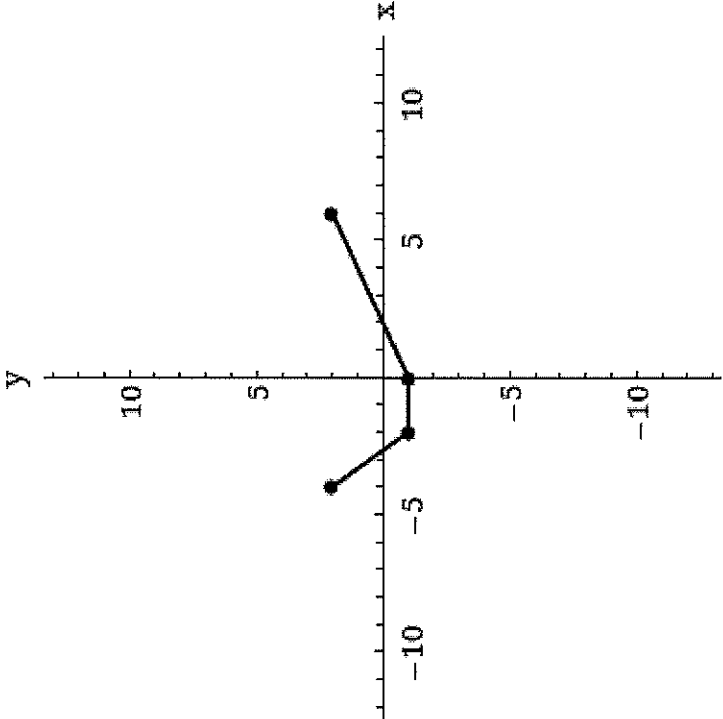




(c) $y = 2f(x)$

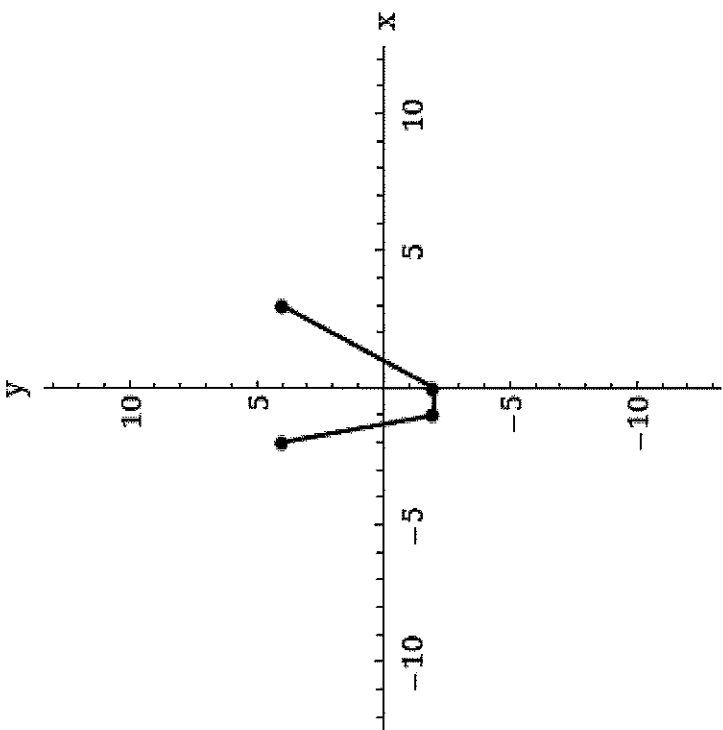




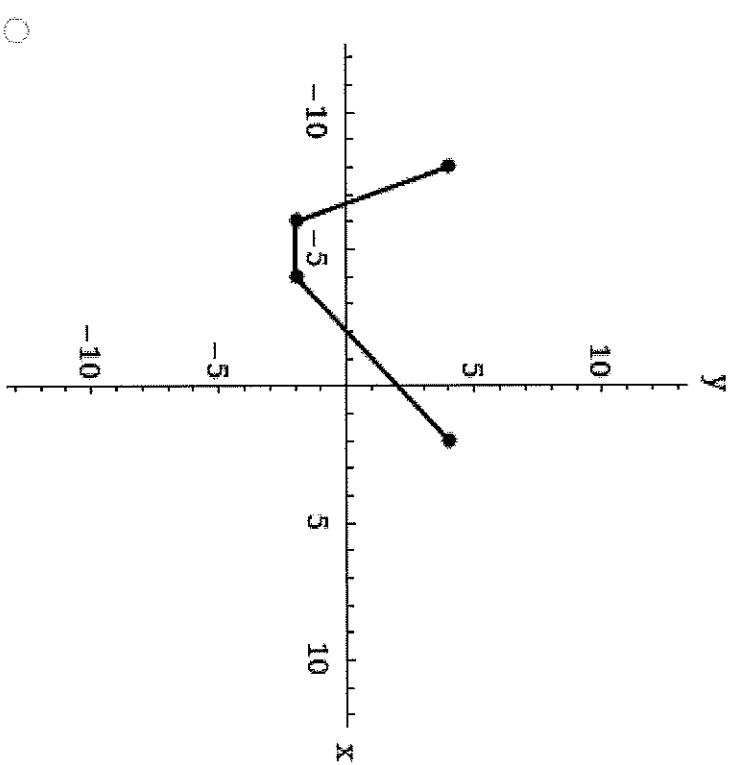
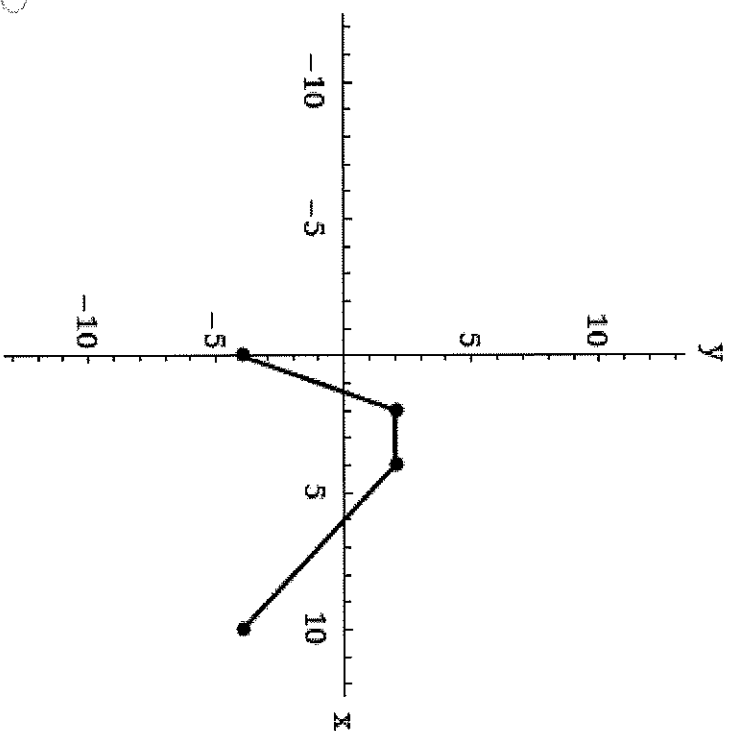


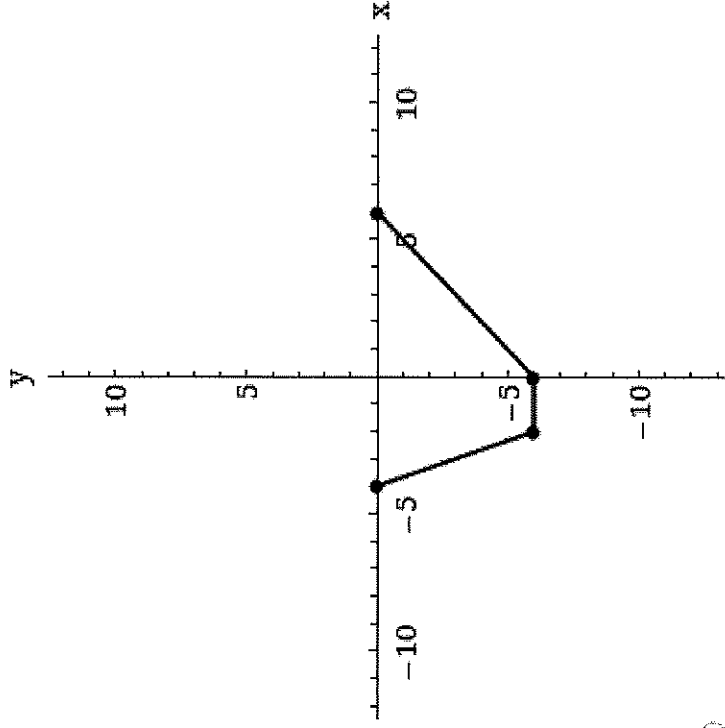
○

(d) $y = -f(x - 4)$



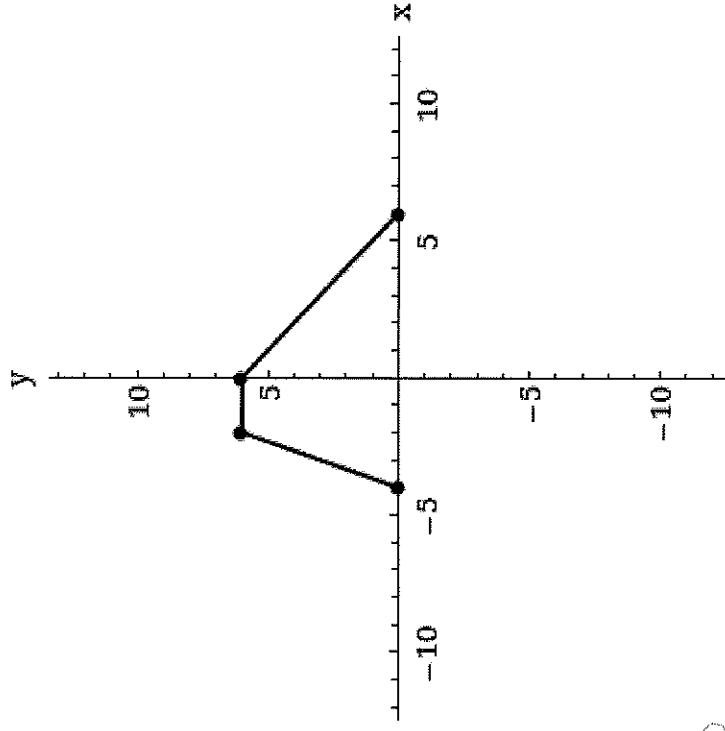
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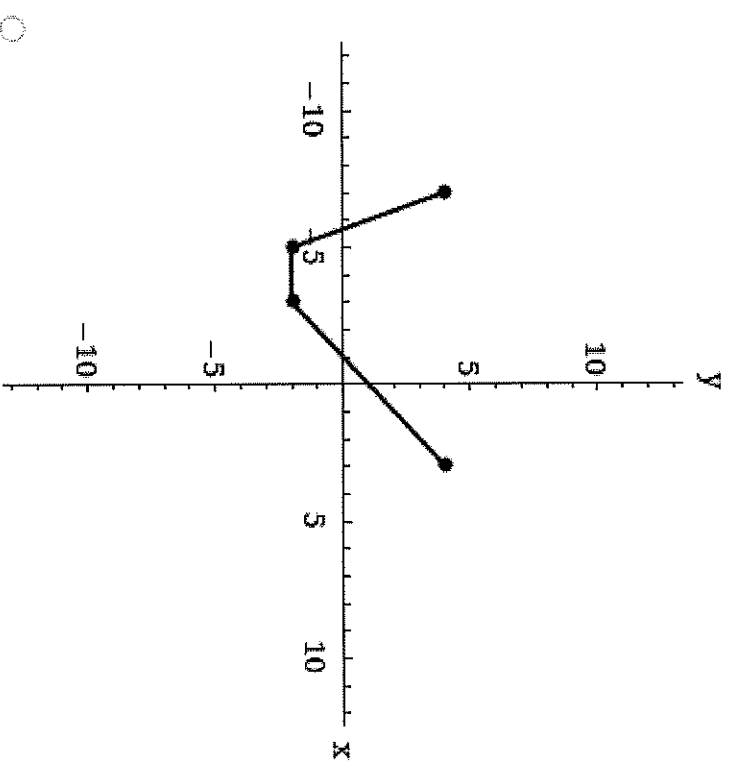
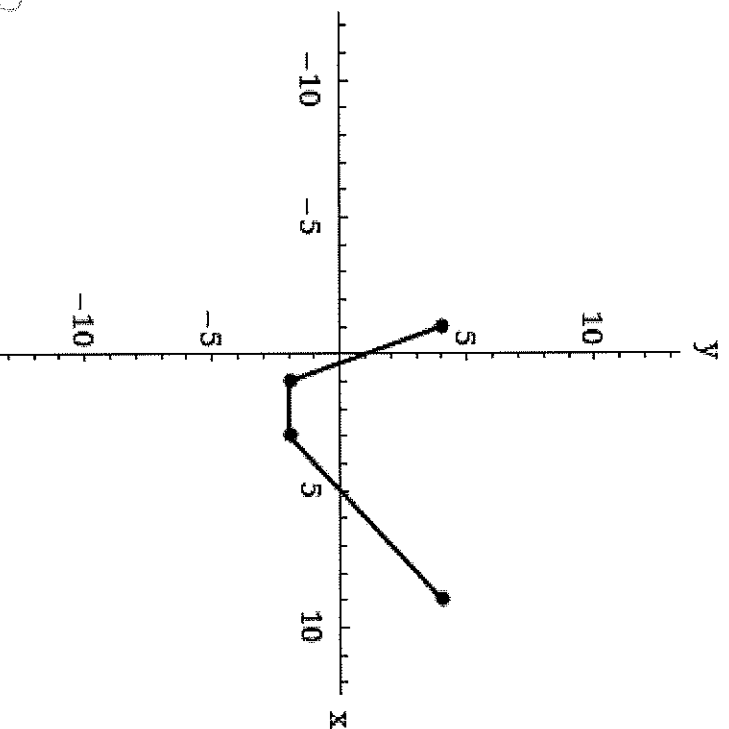


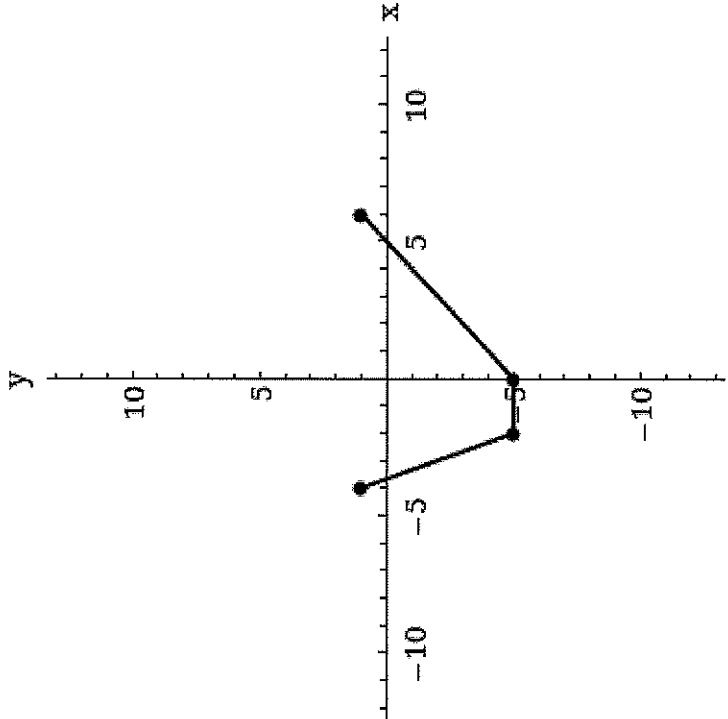
○

(e) $y = f(x) - 3$



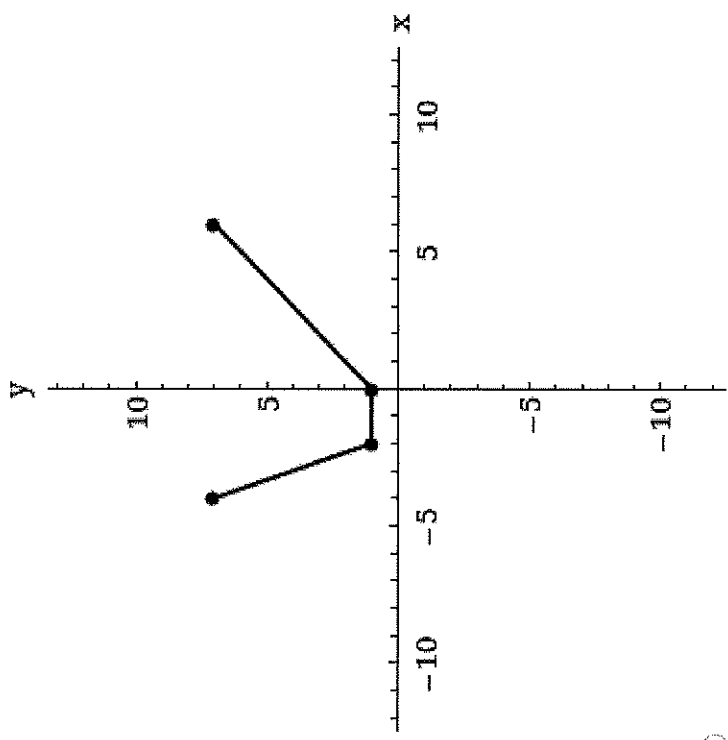
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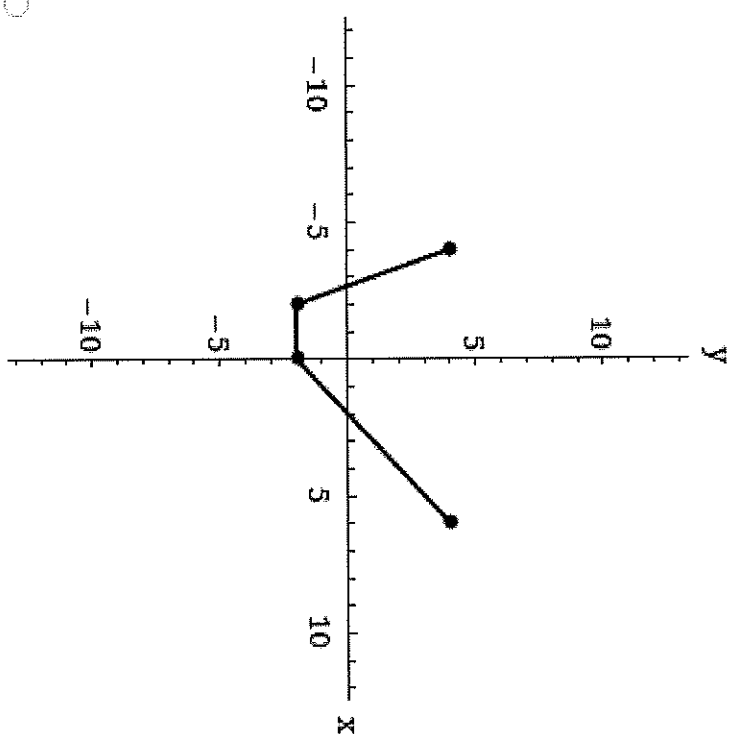
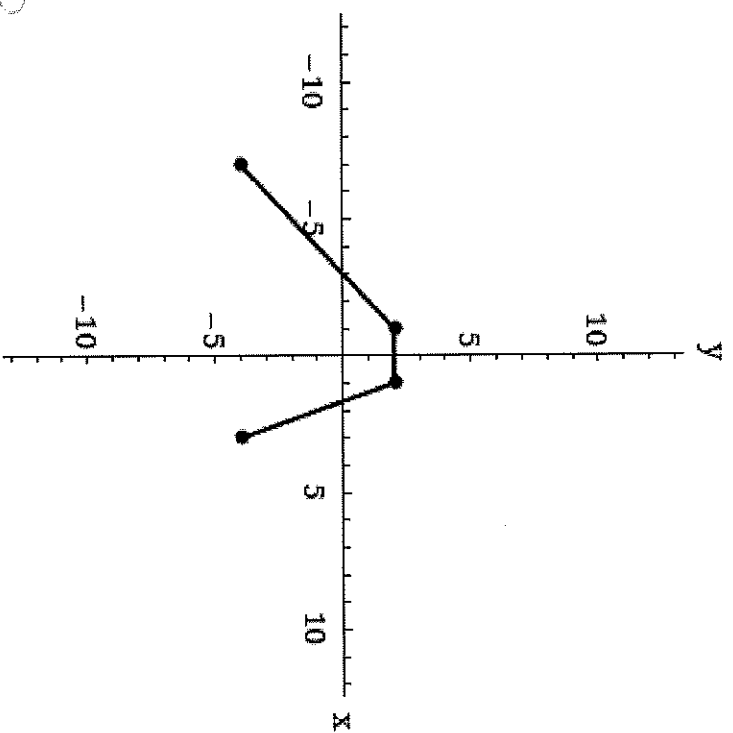


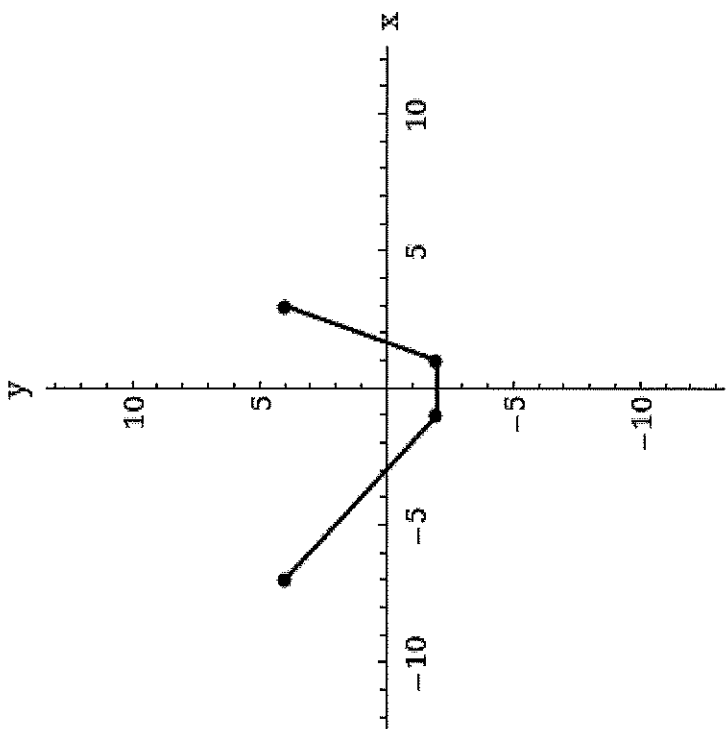
○

(f) $y = -f(x) - 1$



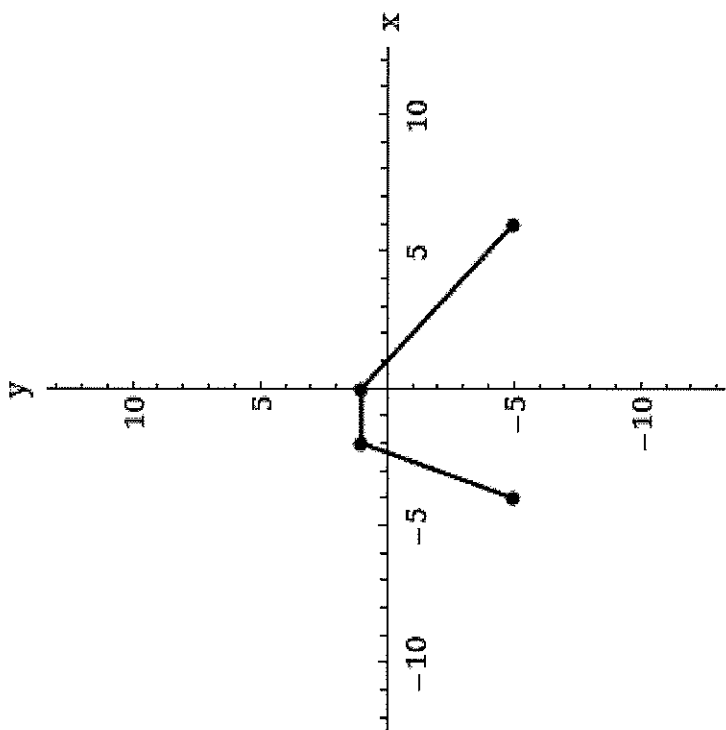
○



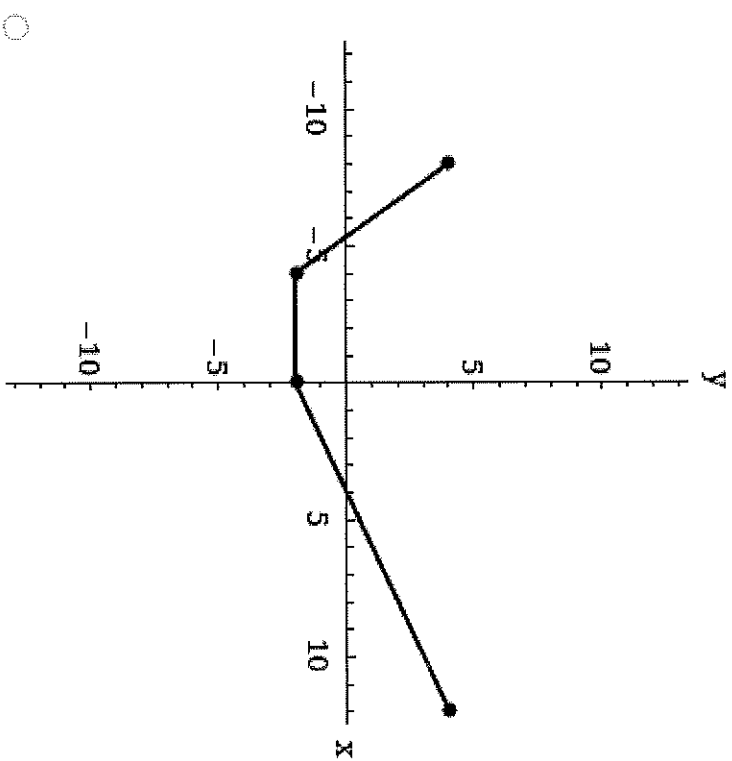
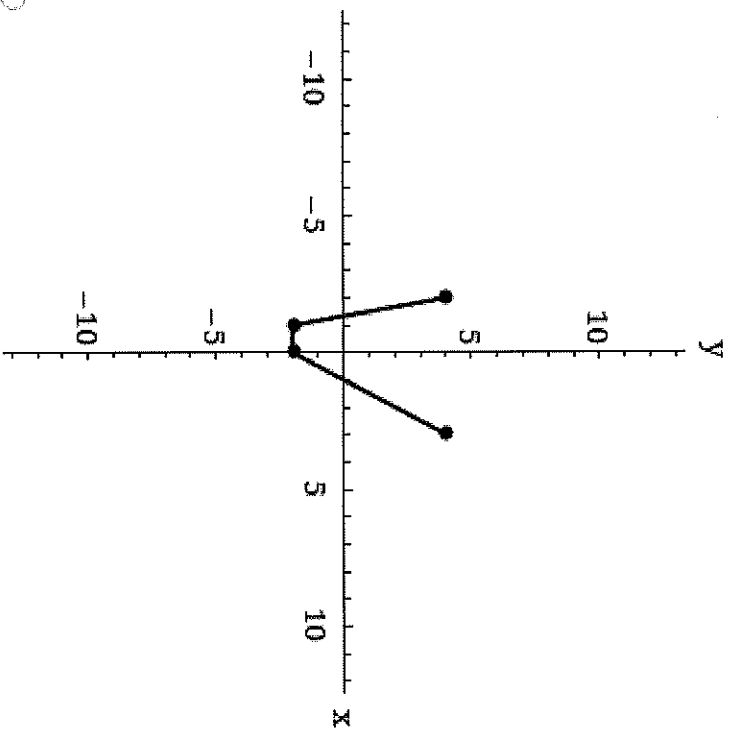


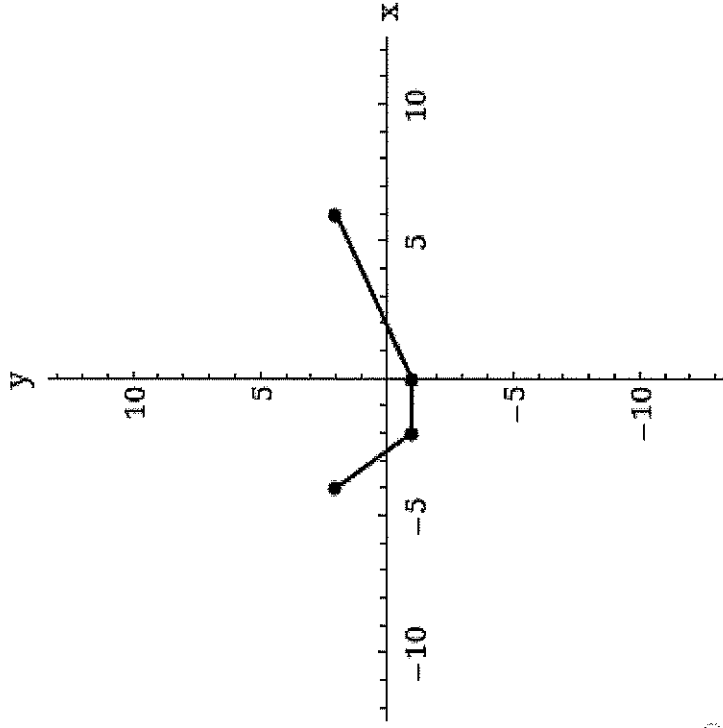
☐

(g) $y = f(2x)$



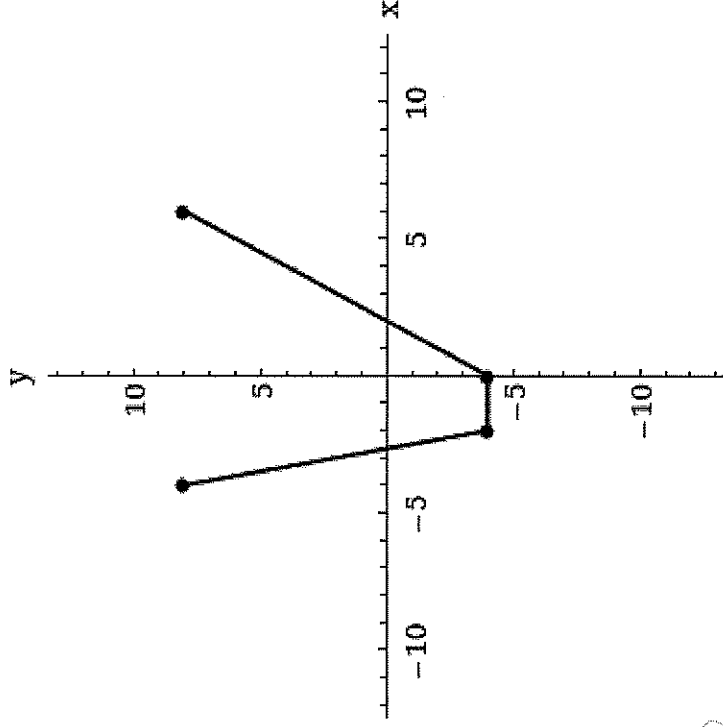
☐





Need Help?

Read It



16. [-/3.33 Points]

DETAILS

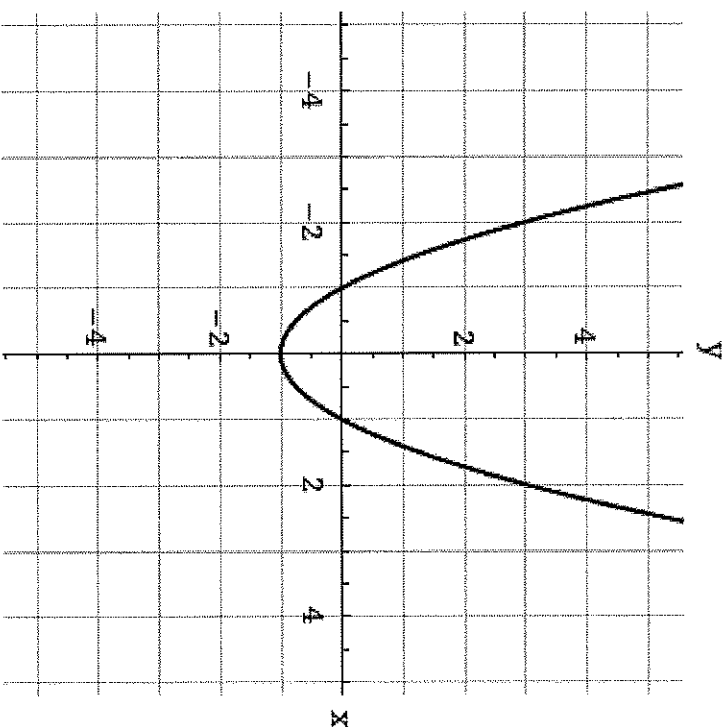
LARPCALC10 1.7.011. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

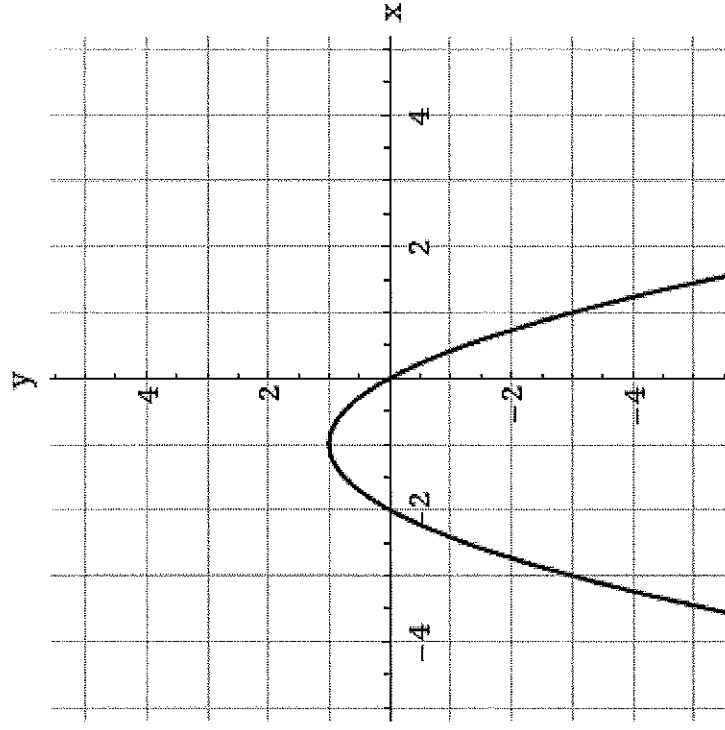
Use the graph of $f(x) = x^2$ to write an equation for the function represented by each graph.

(a)



$y =$

(b)



$y =$

Need Help?

17. [-/3.33 Points]

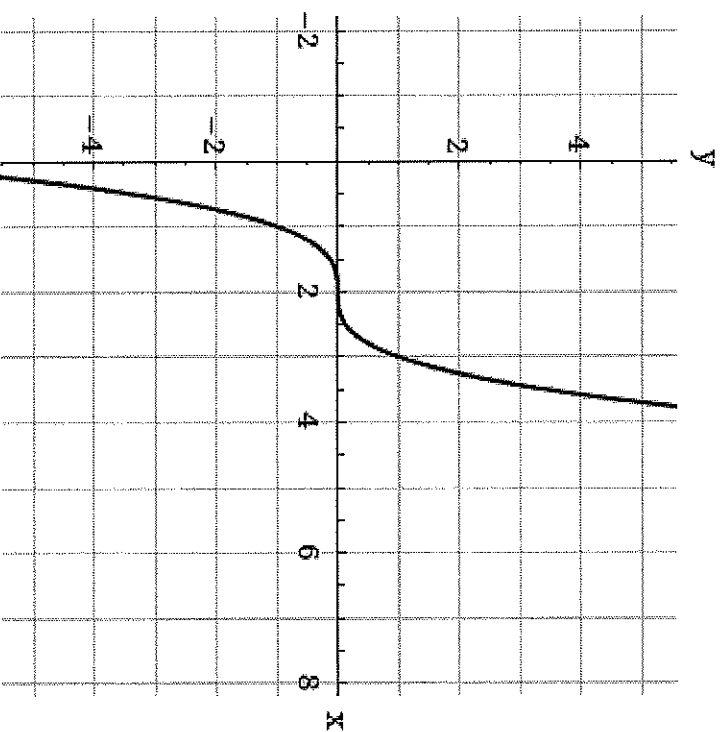
DETAILS

LARPCALC10 1.7.015. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Consider the following graph.



Identify the parent function.

$y =$ (No Response)

Identify the transformation represented by the graph. (Select all that apply.)

- ☐ vertical stretch
- ☐ horizontal shift of 2 units to the right
- ☐ vertical shift of 2 units downward
- ☐ vertical shrink

☐ reflection in the x-axis

Write an equation for the function represented by the graph.

$y =$

Need Help?

[Read It](#)

18. [-/3.33 Points]

DETAILS

LARPCALC10 1.7.023. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

The function g is related to one of the parent functions described in an earlier section.

$$g(x) = -(x - 4)^3$$

(a) Identify the parent function f .

$f(x) =$ (No Response)

(b) Describe the sequence of transformations from f to g . (Select all that apply.)

☐ reflection in the x -axis

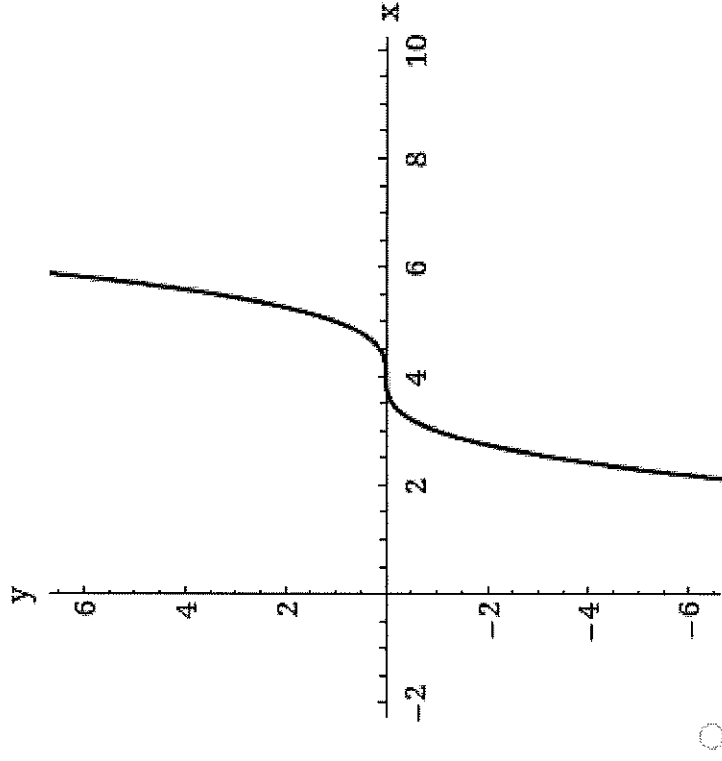
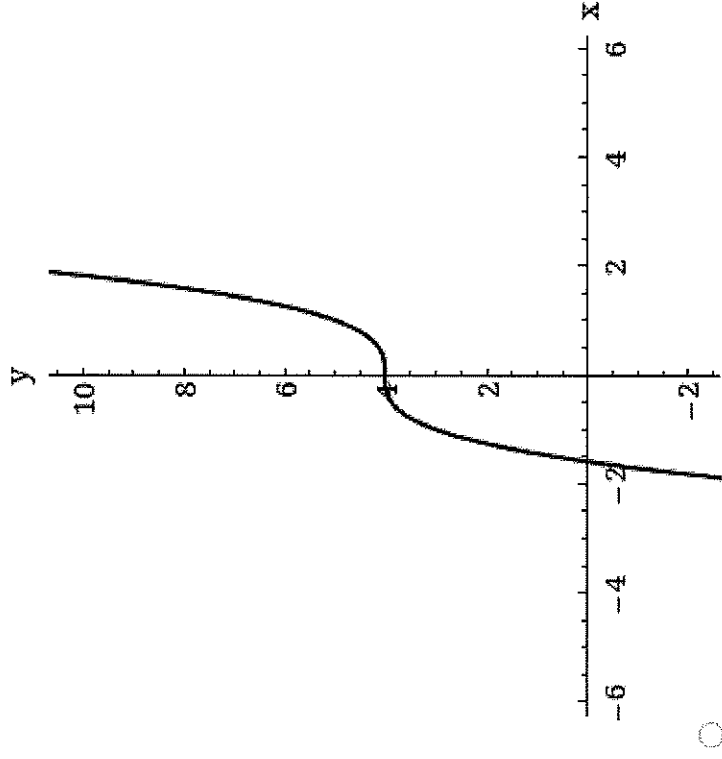
☐ vertical shrink

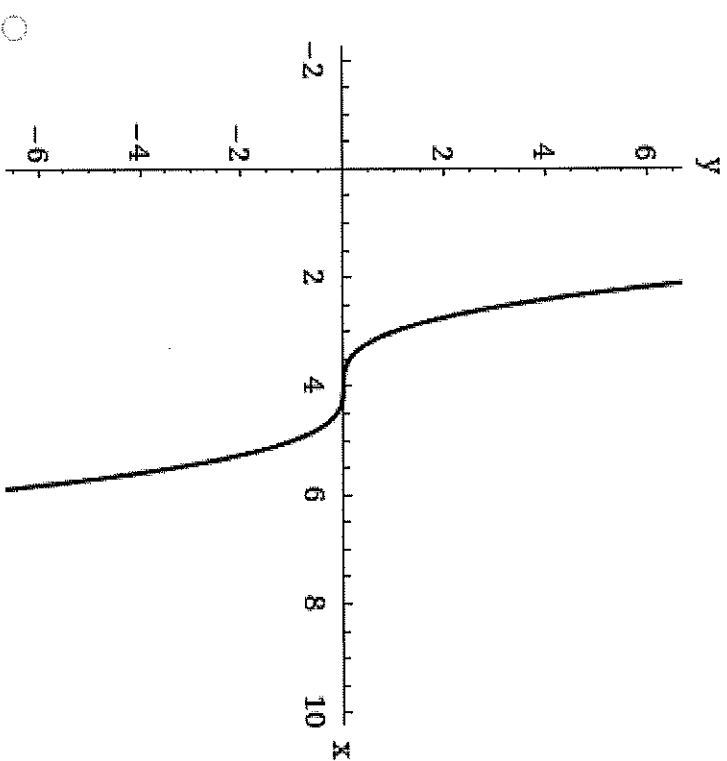
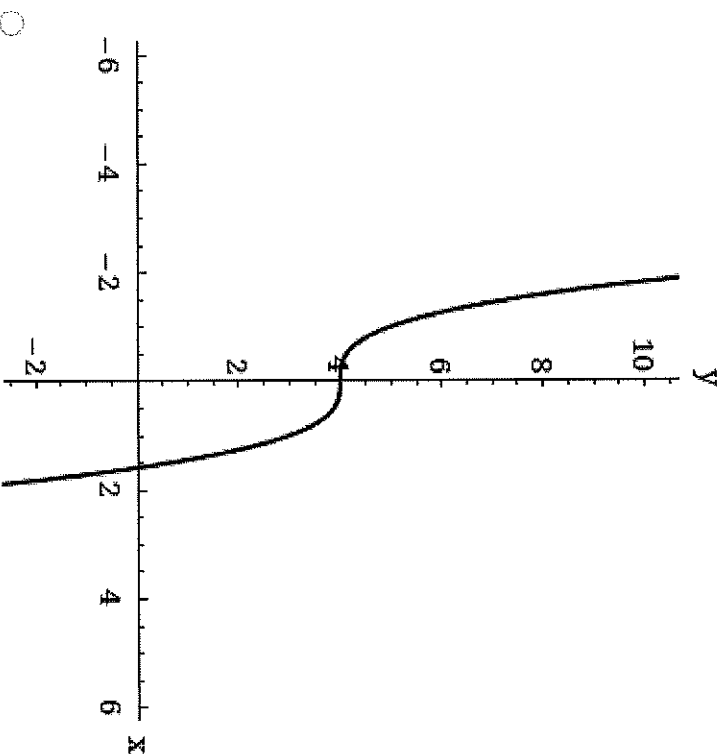
☐ vertical stretch

☐ vertical shift of 4 units upward

☐ horizontal shift of 4 units right

(c) Sketch the graph of g .





(d) Use function notation to write g in terms of f .

$$g(x) = -f\left(\frac{(No Response)}{ }\right)$$

Need Help?

Read It

19. [-/3.33 Points]

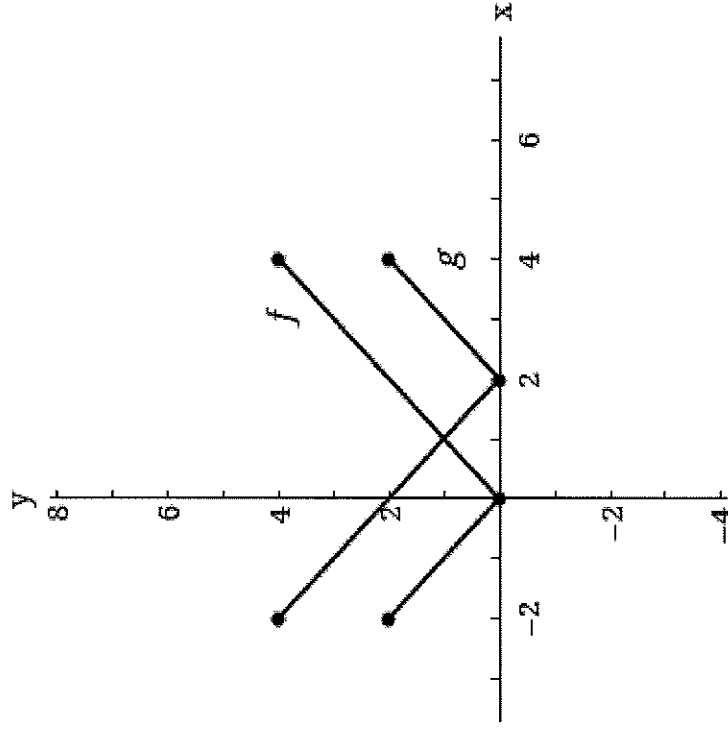
DETAILS

LARPCALC10 1.8.004. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Use the graphs of f and g to graph $h(x) = (f + g)(x)$. (Graph segments with closed endpoints.)



☐ Selection Tool

☐ Line

☐ Ray

☐ Segment

☐ Circle

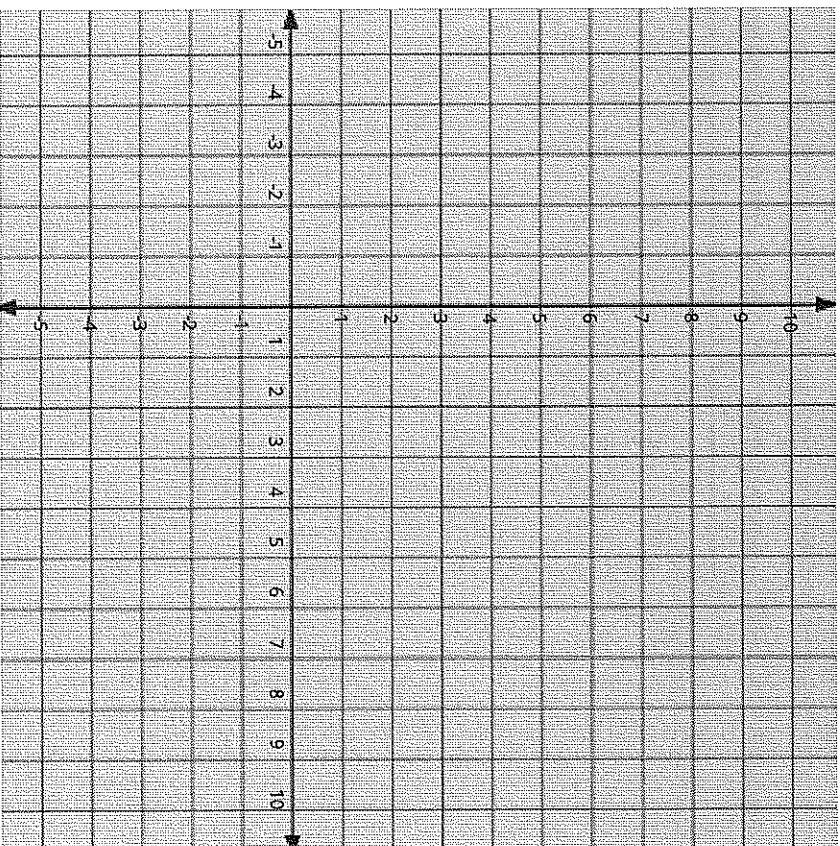
☐ Vertical Parabola

☐ Horizontal Parabola

☐ Point

[No Solution](#)

[Help](#)

[Clear Graph](#)[Delete Layer](#)[Fill](#)[WebAssign Graphing Tool](#)[Graph LayersToggle Open/Closed](#)

- After you add an object to the graph you can use Graph Layers to view and edit its properties.

[Need Help?](#)[Read It](#)

20. [-/3.33 Points]

DETAILS

LARPCALC10 1.8.006.MI. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the following.

$$f(x) = 3x - 9, \quad g(x) = 2 - x$$

(a) $(f + g)(x) =$

(b) $(f - g)(x) =$

(c) $(fg)(x) =$

(d) $(f/g)(x) =$

What is the domain of f/g ? (Enter your answer using interval notation.)

Need Help?

21. [-/3.33 Points]

DETAILS

LARPCALC10 1.8.009. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the following.

$$f(x) = x^2 + 5, \quad g(x) = \sqrt{4 - x}$$

(a) $(f + g)(x) =$

(b) $(f - g)(x) =$

(c) $(fg)(x) =$

(d) $(f/g)(x) =$

What is the domain of f/g ? (Enter your answer using interval notation.)

Need Help?

22. [-/3.33 Points]

DETAILS

LARPCALC10 1.8.018. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Evaluate the function for $f(x) = x + 3$ and $g(x) = x^2 - 2$.

$$(f + g)(t - 4)$$

$$(f + g)(t - 4) =$$

Need Help?

23. [-/3.33 Points]

DETAILS

LARPCALC10 1.8.022. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Evaluate the function for $f(x) = x + 3$ and $g(x) = x^2 - 2$.

$$(f \circ g)(0)$$

$$(f \circ g)(0) = \text{(No Response)}$$

Need Help?

Read It

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24. [-/3.33 Points]

DETAILS

LARPCALC10 1.8.031. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find $f \circ g$, $g \circ f$, and $g \circ g$.

$$f(x) = x^2, \quad g(x) = x - 4$$

(a) $f \circ g$

$$\text{(No Response)}$$

(b) $g \circ f$

$$\text{(No Response)}$$

(c) $g \circ g$

$$\text{(No Response)}$$

Need Help?

Read It

25. [-/3.33 Points]

DETAILS

LARPCALC10 1.8.042. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find $f \circ g$ and $g \circ f$.

$$f(x) = \frac{8}{x^2 - 1}, \quad g(x) = x + 1$$

(a) $f \circ g$

(No Response)

(b) $g \circ f$

(No Response)

Find the domain of each function and each composite function. (Enter your answers using interval notation.)

domain of f

(No Response)

domain of g

(No Response)

domain of $f \circ g$

(No Response)

domain of $g \circ f$

(No Response)

Need Help?

Read It

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26. [-/3.33 Points]

DETAILS

LARPCALC10 1.9.009. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the inverse function of f informally.

$$f(x) = 2x + 7$$

$$f^{-1}(x) = \boxed{\text{(No Response)}}$$

Verify that $ff^{-1}(x) = x$ and $f^{-1}(f(x)) = x$.

$$\begin{aligned} ff^{-1}(x) &= f\left(\boxed{\text{(No Response)}}\right) \\ &= 2\left(\boxed{\text{(No Response)}}\right) + 7 \\ &= x \end{aligned}$$

$$\begin{aligned} f^{-1}(f(x)) &= f^{-1}\left(\boxed{\text{(No Response)}}\right) \\ &= \frac{\boxed{\text{(No Response)}} - 7}{2} \\ &= x \end{aligned}$$

Need Help?

Read It

27. [-/3.33 Points]

DETAILS

LARPCALC10 1.9.012. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Find the inverse function of f informally.

$$f(x) = x^2 + 4, x \geq 0$$

$$f^{-1}(x) = \boxed{\text{No Response}}$$

Verify that $f(f^{-1}(x)) = x$ and $f^{-1}(f(x)) = x$.

$$f(f^{-1}(x)) = f\left(\boxed{\text{No Response}}\right)$$

$$= \left(\boxed{\text{No Response}}\right)^2 + 4$$

$$= x$$

$$f^{-1}(f(x)) = f^{-1}\left(\boxed{\text{No Response}}\right)$$

$$= \sqrt{\boxed{\text{No Response}} - 4}$$

$$= x$$

Need help?

Read It

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28. [-/3.33 Points]

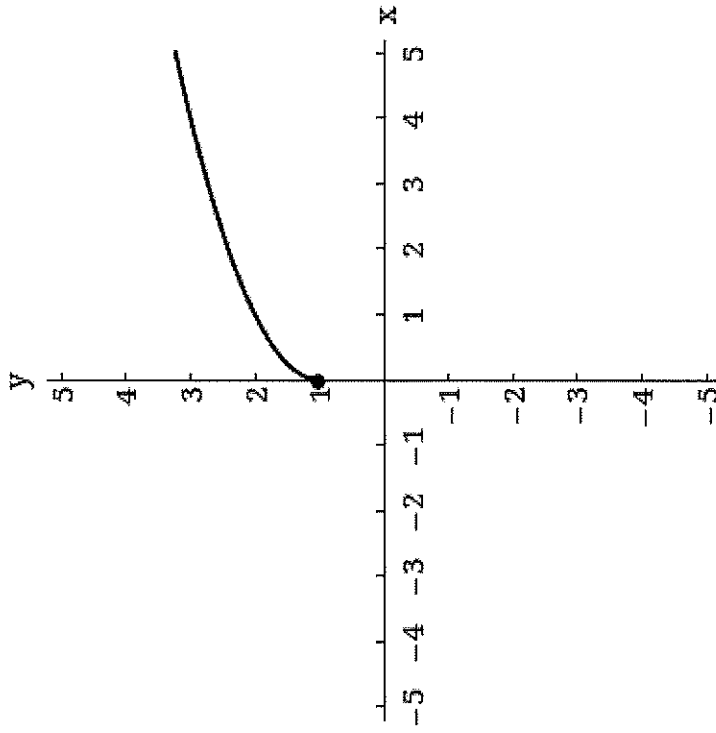
DETAILS

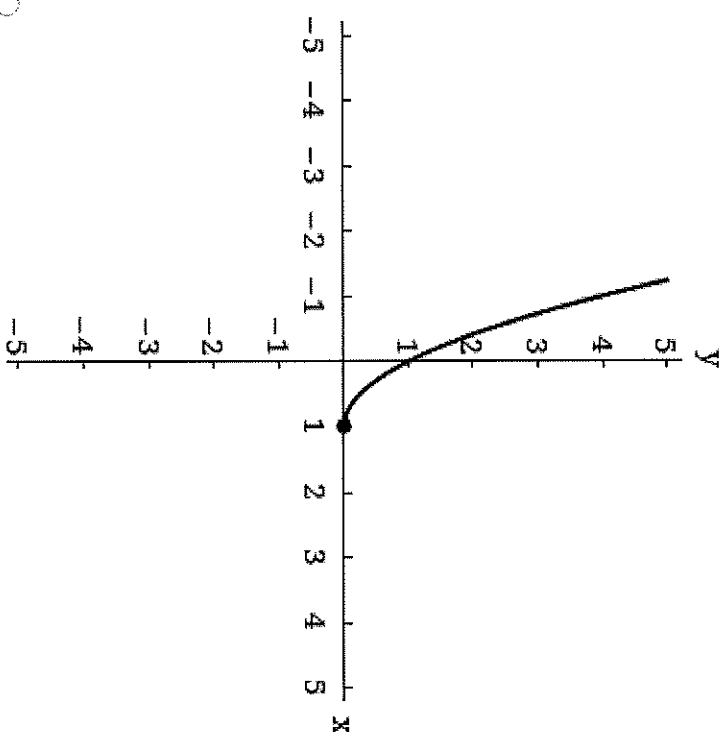
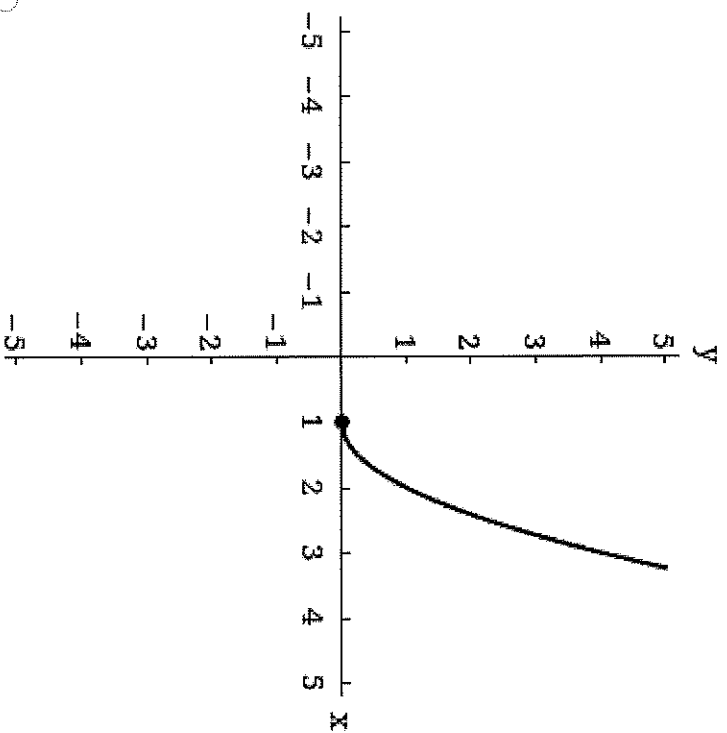
LARPCALC10 1.9.019. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

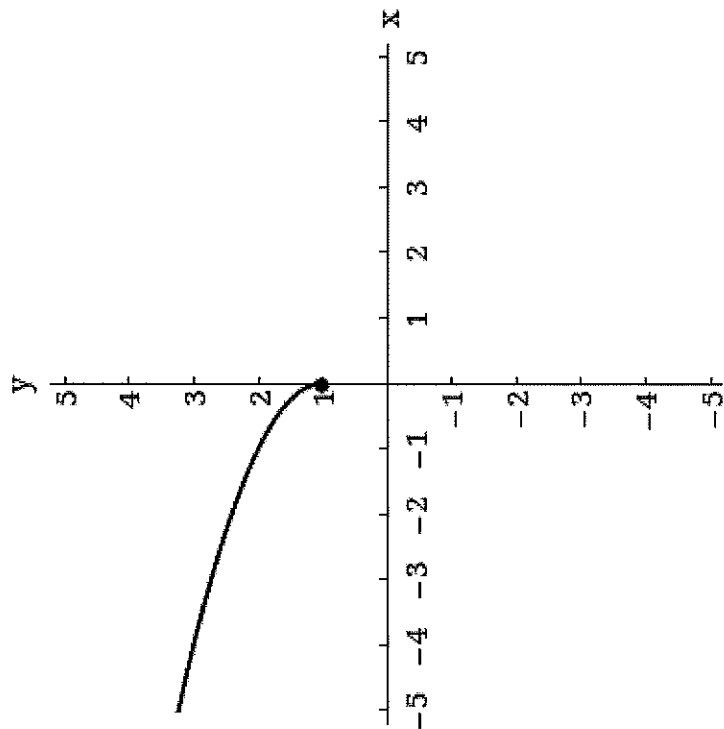
Use the graph of the function to sketch the graph of its inverse function $y = f^{-1}(x)$.





○

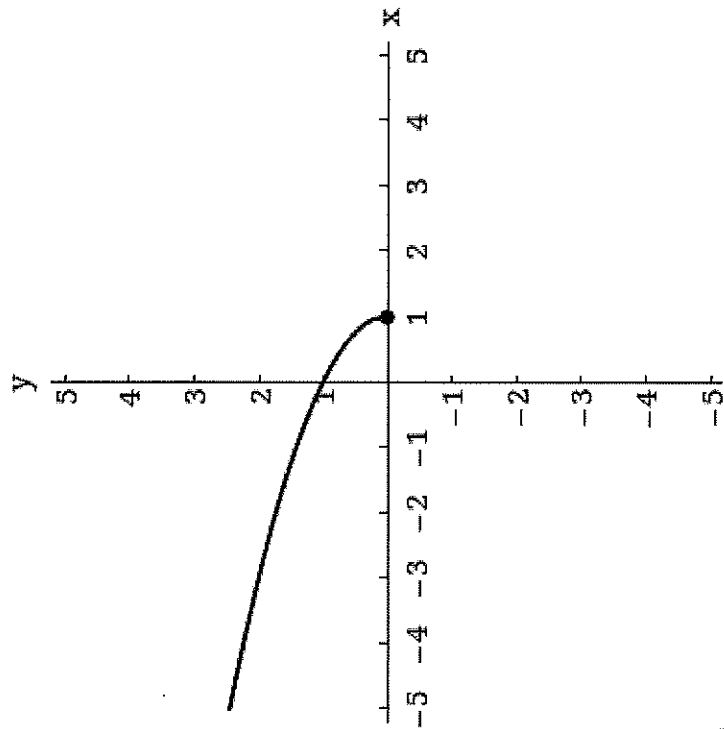
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Need Help?

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29. [-/3.33 Points]

DETAILS

LARPCALC10 1.9.031. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

Show that f and g are inverse functions algebraically and graphically.

$$f(x) = \frac{x-1}{x+5}, \quad g(x) = -\frac{5x+1}{x-1}$$

(a) algebraically

$$f(g(x)) = f\left(\frac{(\text{No Response})}{(\text{No Response})}\right)$$

$$= \frac{\frac{(\text{No Response})}{(\text{No Response})} - 1}{\frac{(\text{No Response})}{(\text{No Response})} + 5} \cdot \frac{x-1}{x-1}$$

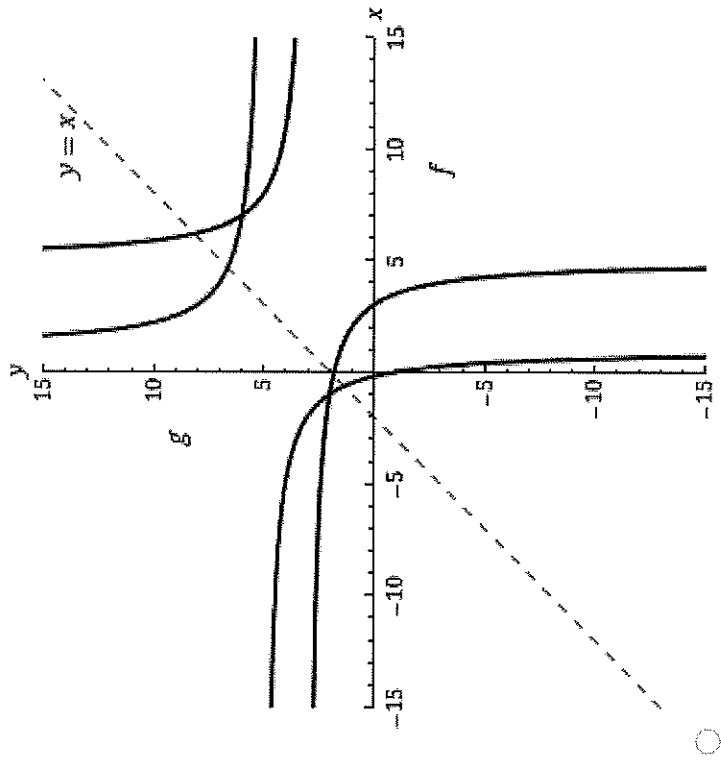
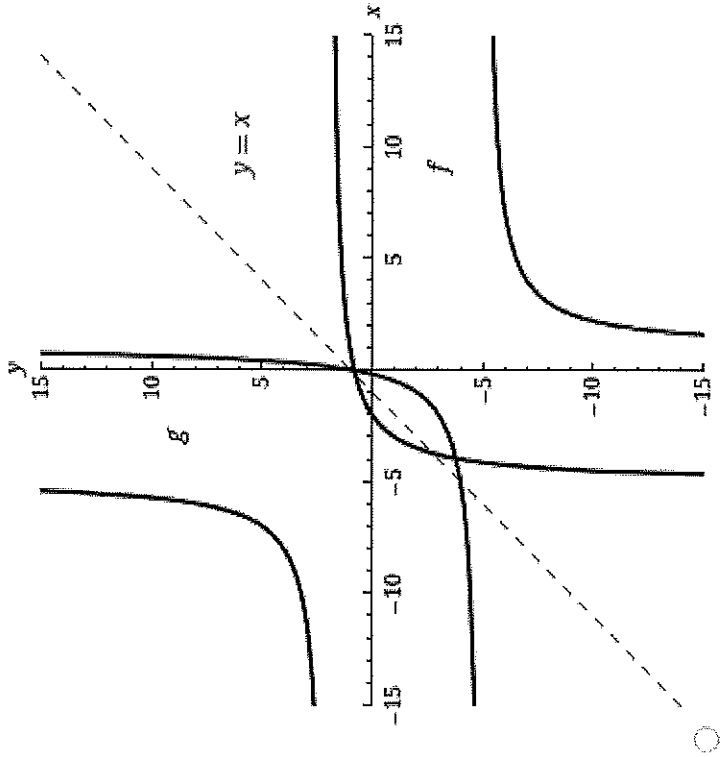
$$= x$$

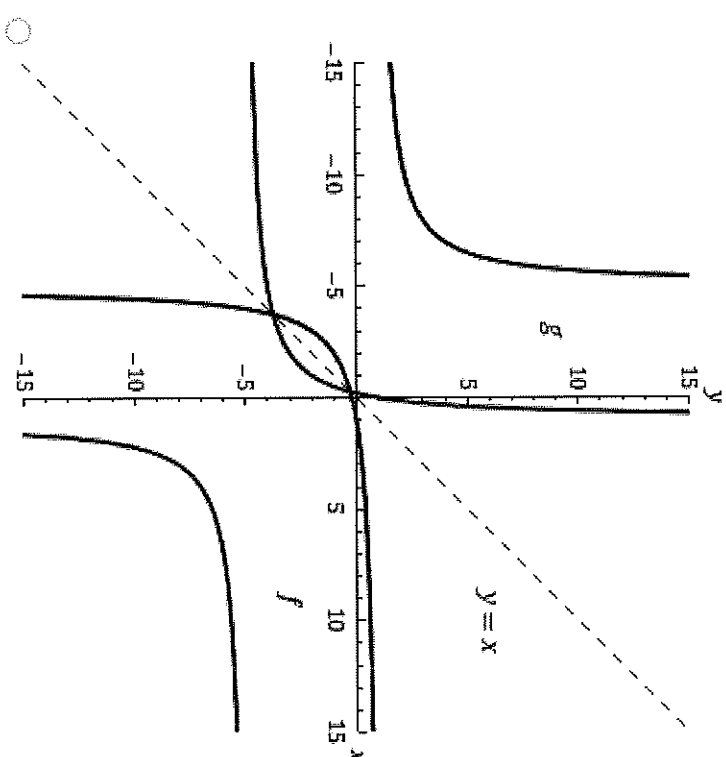
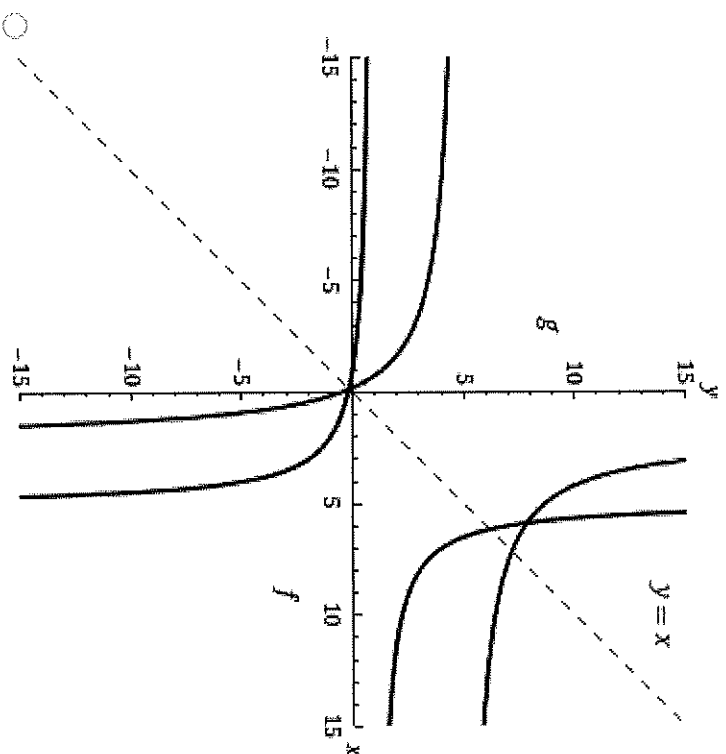
$$g(f(x)) = g\left(\frac{(\text{No Response})}{(\text{No Response})}\right)$$

$$= -\frac{5\left(\frac{(\text{No Response})}{(\text{No Response})}\right) + 1}{\frac{(\text{No Response})}{(\text{No Response})} - 1} \cdot \frac{x+5}{x+5}$$

$$= x$$

(b) graphically





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30. [-/3.43 Points]

DETAILS

LARPCALC10 1.9.046. 0/15 Submissions Used

MY NOTES

ASK YOUR TEACHER

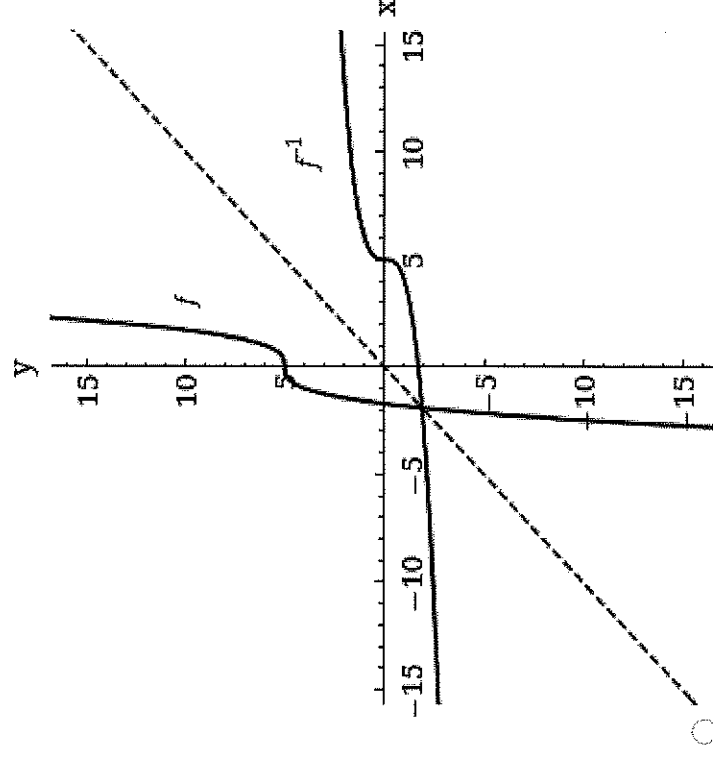
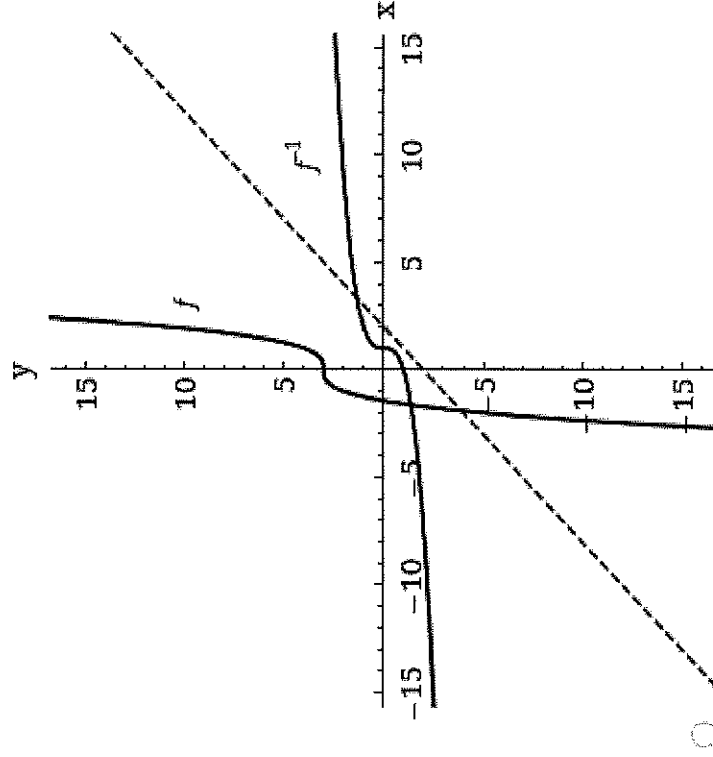
Consider the following function.

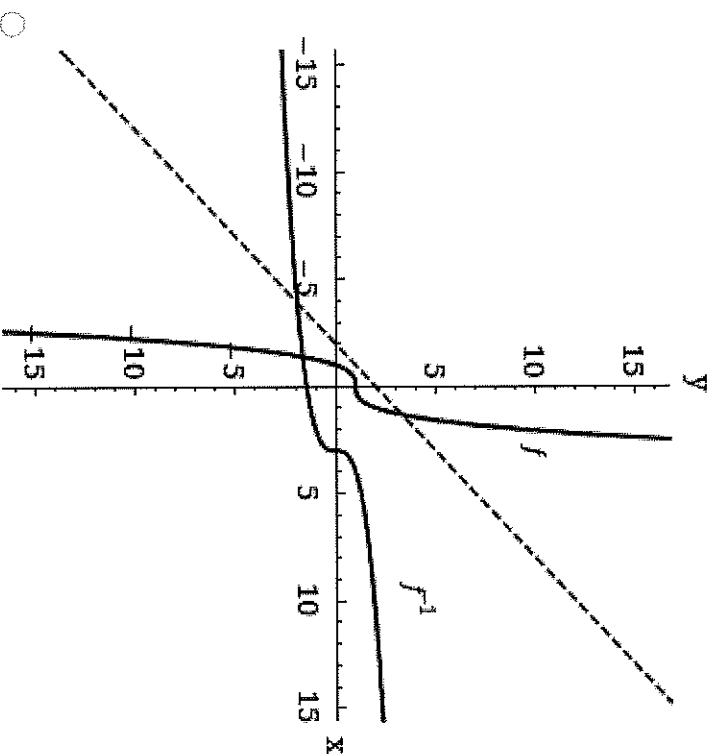
$$f(x) = x^3 + 3$$

(a) Find the inverse function of f .

$$f^{-1}(x) = \boxed{(No Response)}$$

(b) Graph both f and f^{-1} on the same set of coordinate axes.



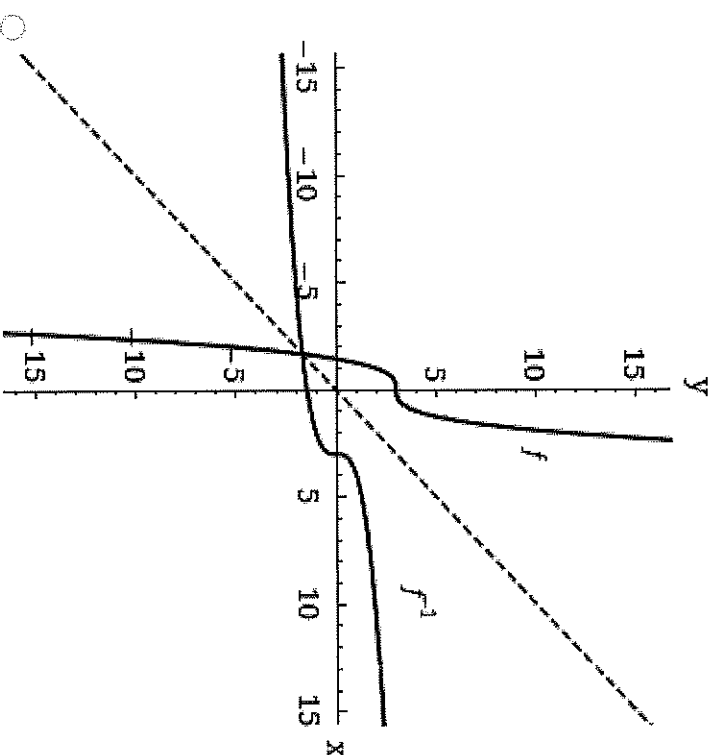


(c) Describe the relationship between the graphs of f and f^{-1} .

- ☐ The graph of f^{-1} is the reflection of f in the line $y = x$.
- ☐ The graph of f^{-1} is the reflection of f in the y -axis.
- ☐ The graph of f^{-1} is the reflection of f in the x -axis.
- ☐ The graph of f^{-1} is the same as the graph of f .
- ☐ The graph of f^{-1} is the reflection of f in the line $y = -x$.

(d) State the domain and range of f . (Enter your answers using interval notation.)

domain	(No Response)
range	(No Response)



State the domain and range of f^{-1} . (Enter your answers using interval notation.)

domain

(No Response)

range

(No Response)

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