

← MAT2550, section ONL6FA_ONL6F, Summer 2 2021

Exam 1 Math 2550 (Test)

 INSTRUCTOR
Bradford Thompson
South College

Current Score

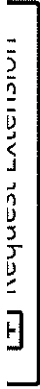
QUESTION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
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4

Due Date

TUE, AUG 17, 2021
11:59 PM EDT



Description



Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

Assignment Scoring

Your last submission is used for your score.

DETAILS

1. LARPCALC10 2.2.023.

MY NOTES

ASK YOUR TEACHER

Describe the left-hand and right-hand behavior of the graph of the polynomial function. (Select all that apply.)

$$h(x) = 3x - 8x^3 + x^2$$

- ☐ The graph rises to the right.
- ☐ The graph falls to the right.
- ☐ The graph rises to the left.
- ☐ The graph falls to the left.

2. **DETAILS** **LARPCALC10 3.2.020.****MY NOTES****ASK YOUR TEACHER**

Evaluate the logarithm at the given value of x without using a calculator.

Function	Value
----------	-------

$g(x) = \log_b(x)$	$x = \sqrt{b}$
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3. DETAILS

LARPCALC10 2.2.017.

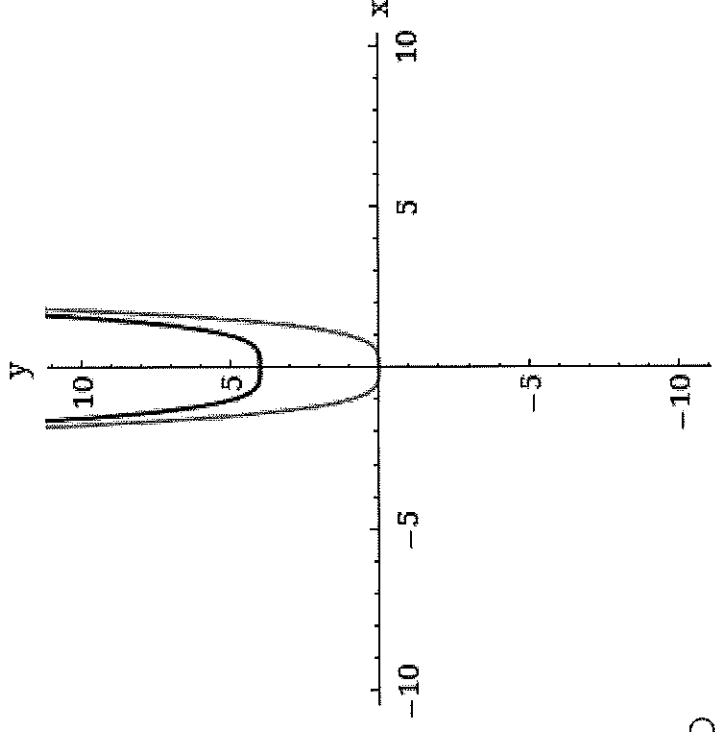
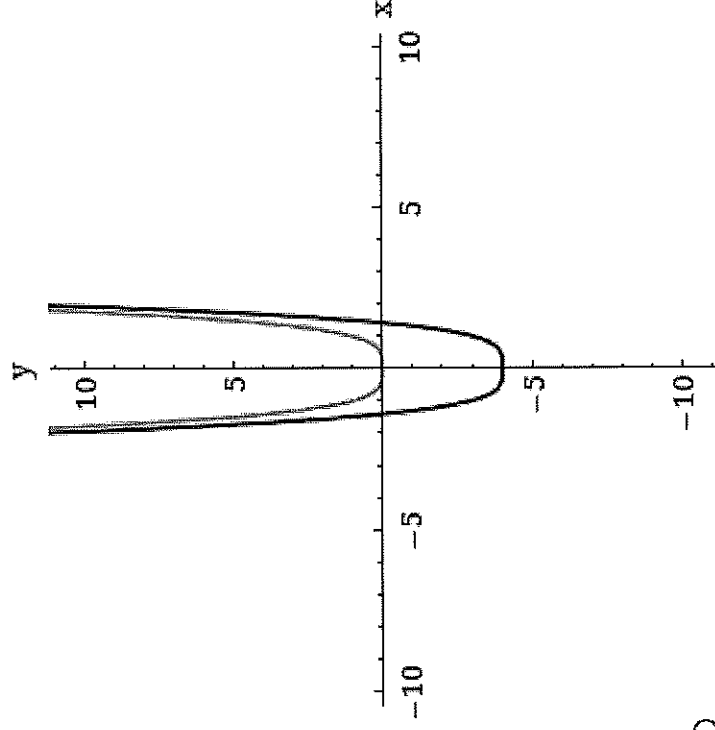
MY NOTES

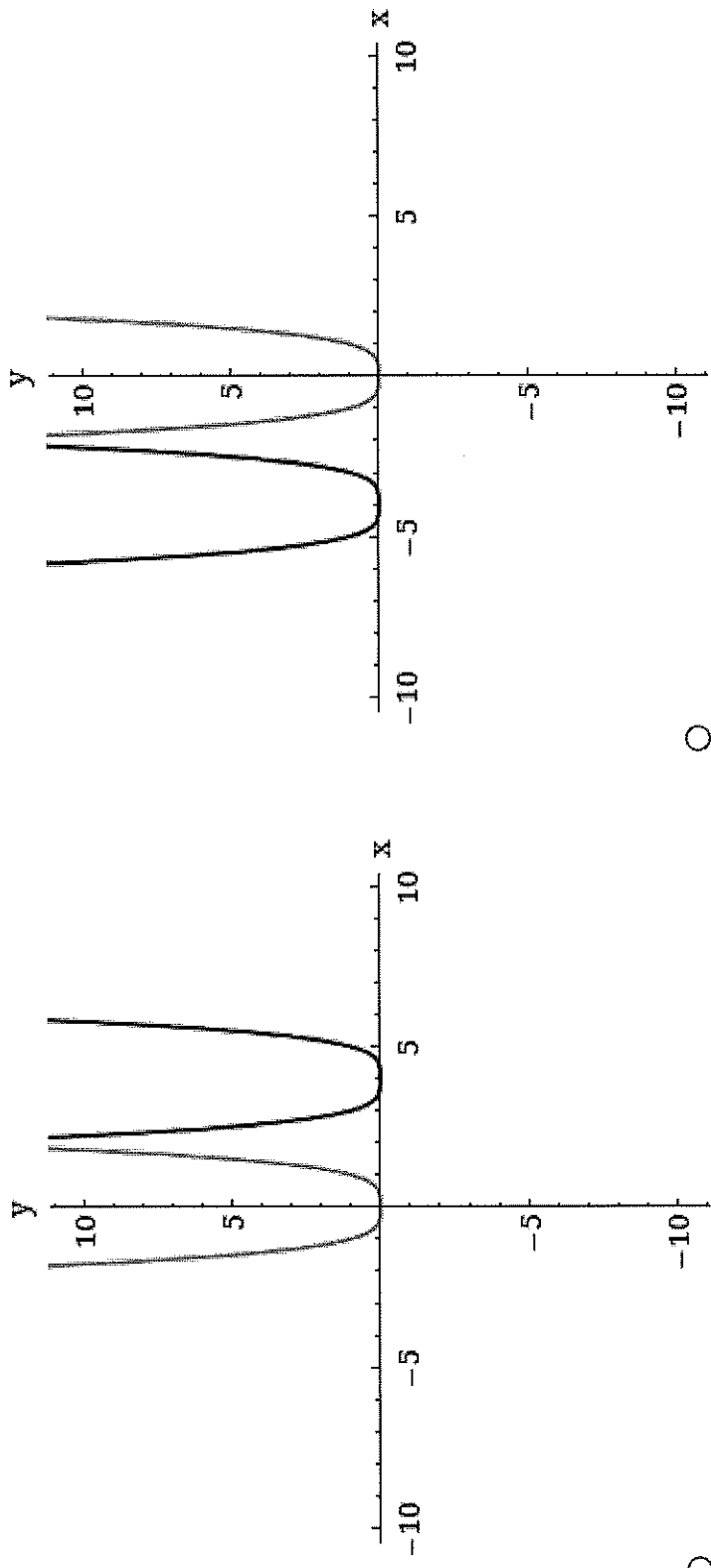
ASK YOUR TEACHER

Sketch the graph of $y = x^n$ and each transformation.

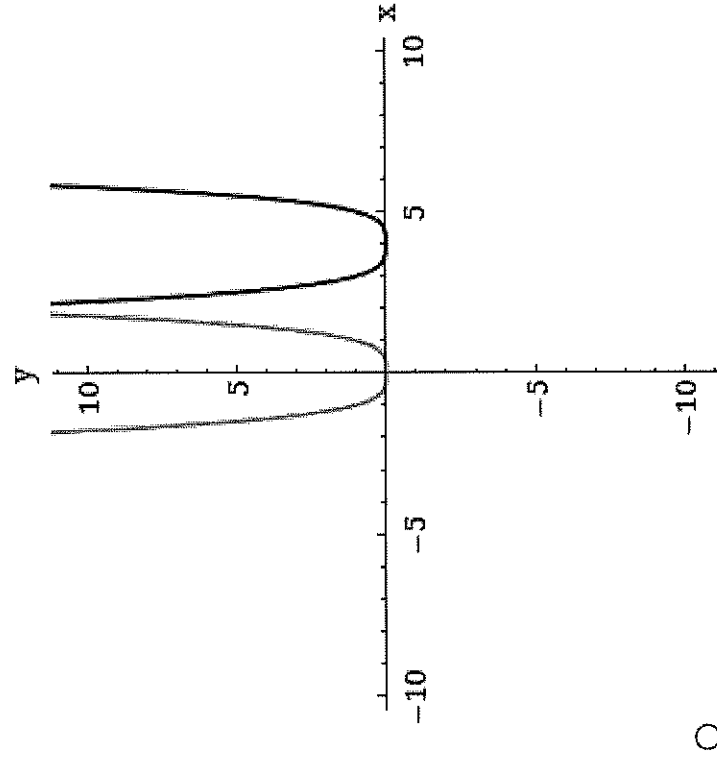
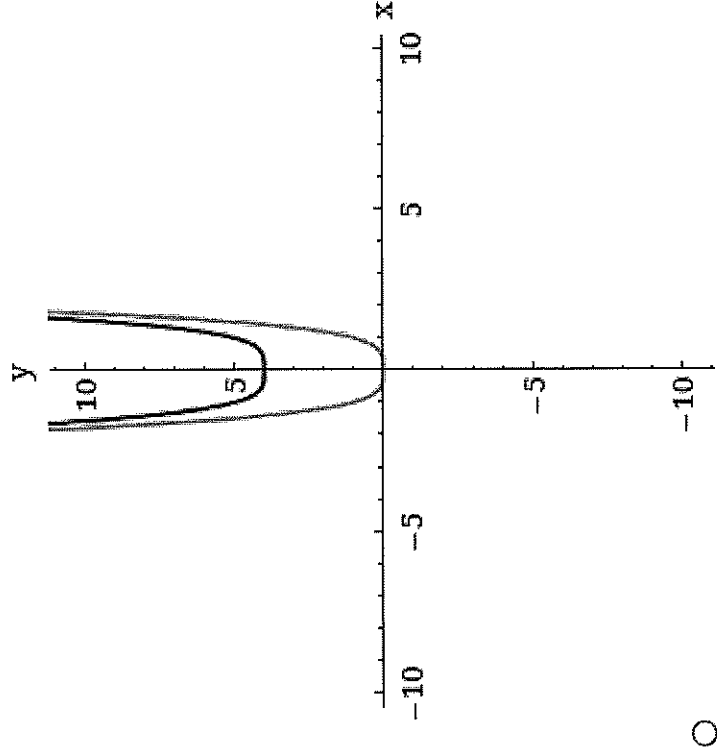
$$y = x^4$$

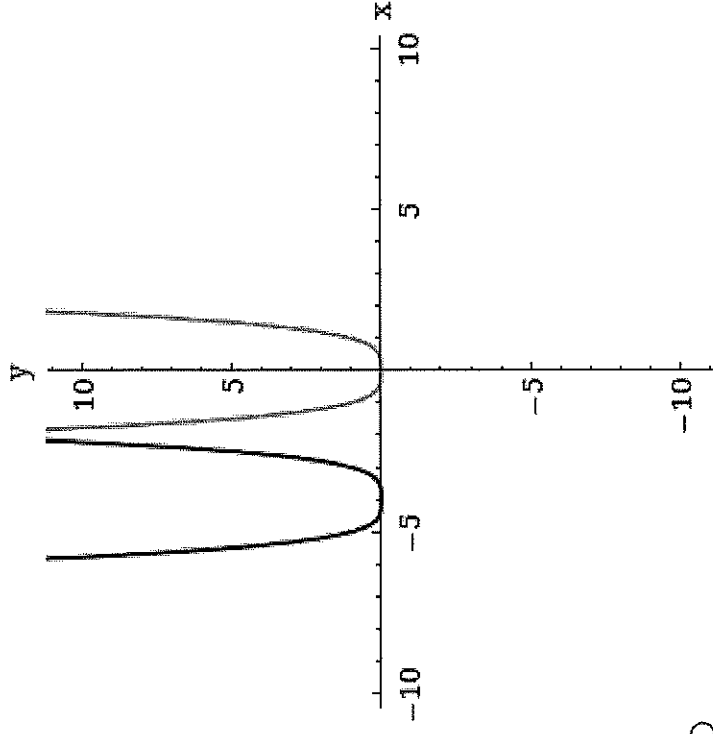
$$(a) \quad f(x) = (x + 4)^4$$





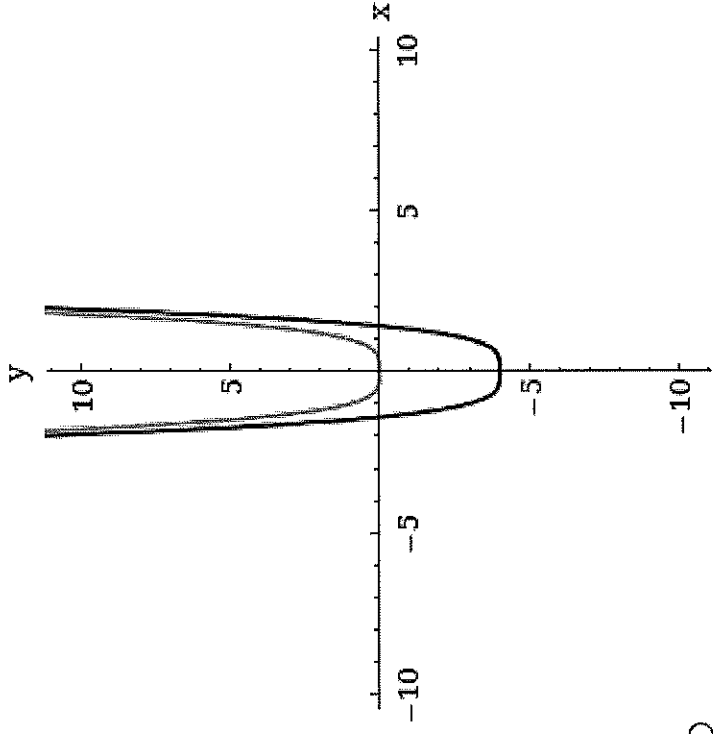
(b) $f(x) = x^4 - 4$

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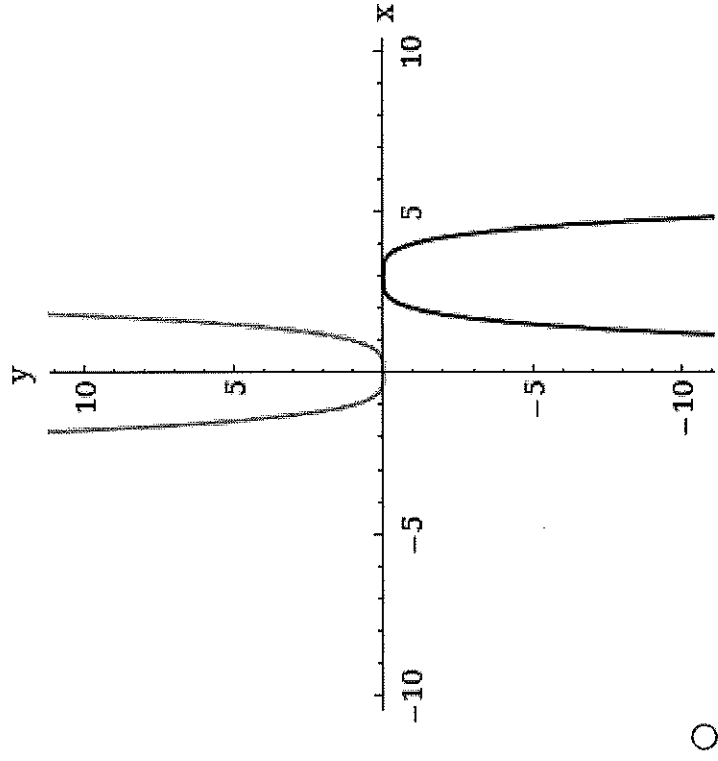
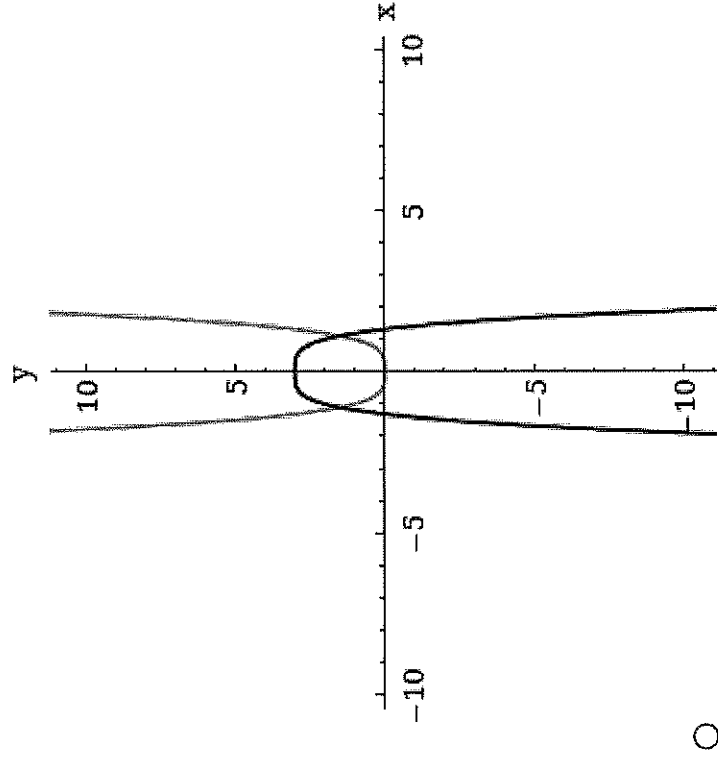


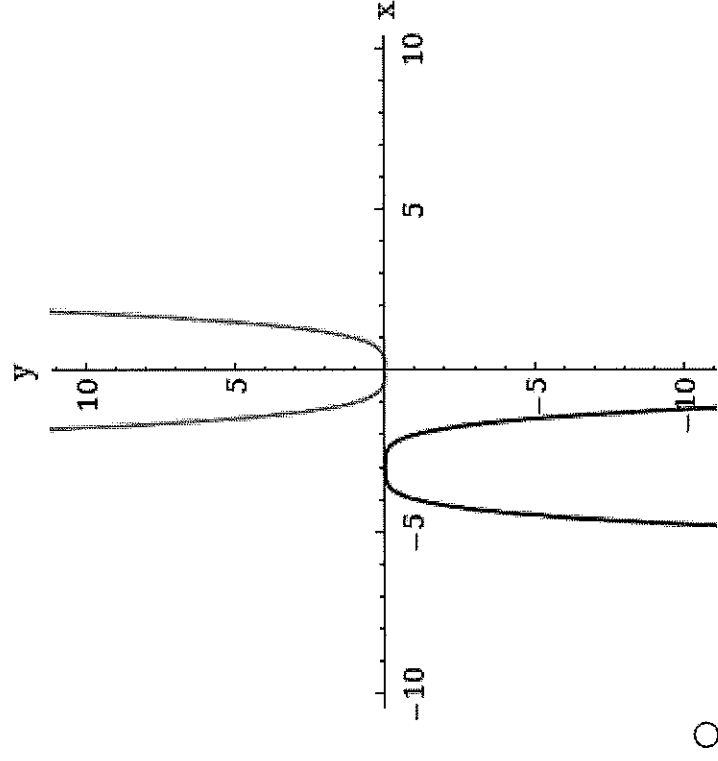
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(c) $f(x) = 3 - x^4$

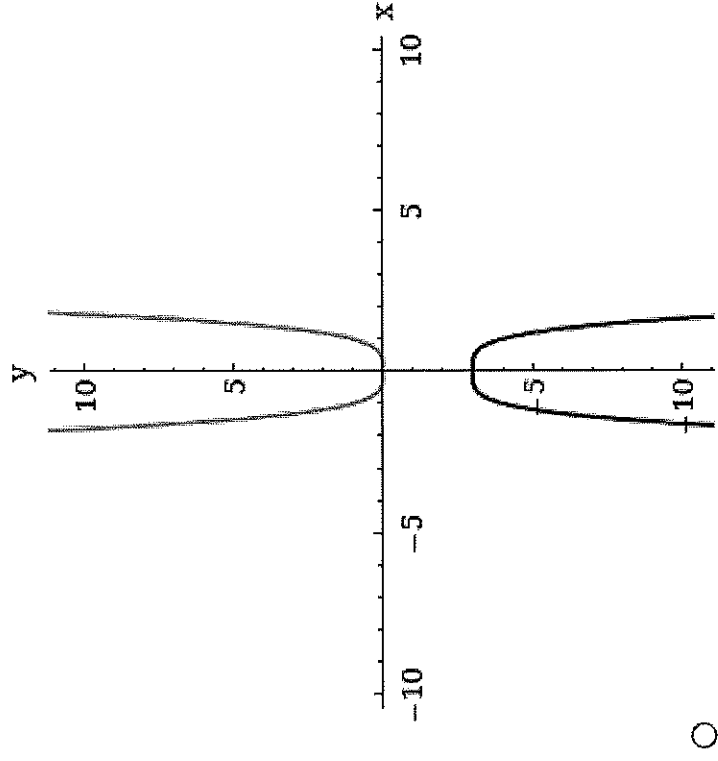


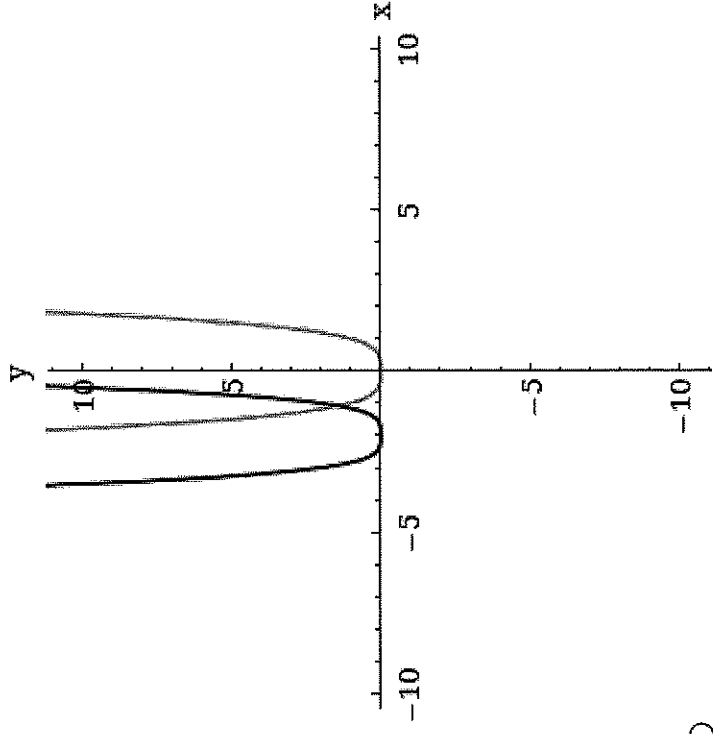
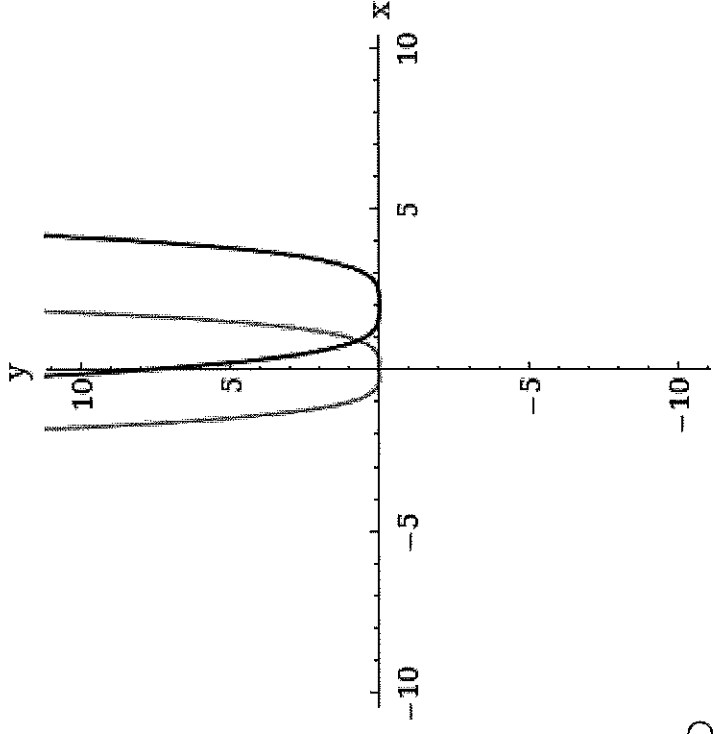
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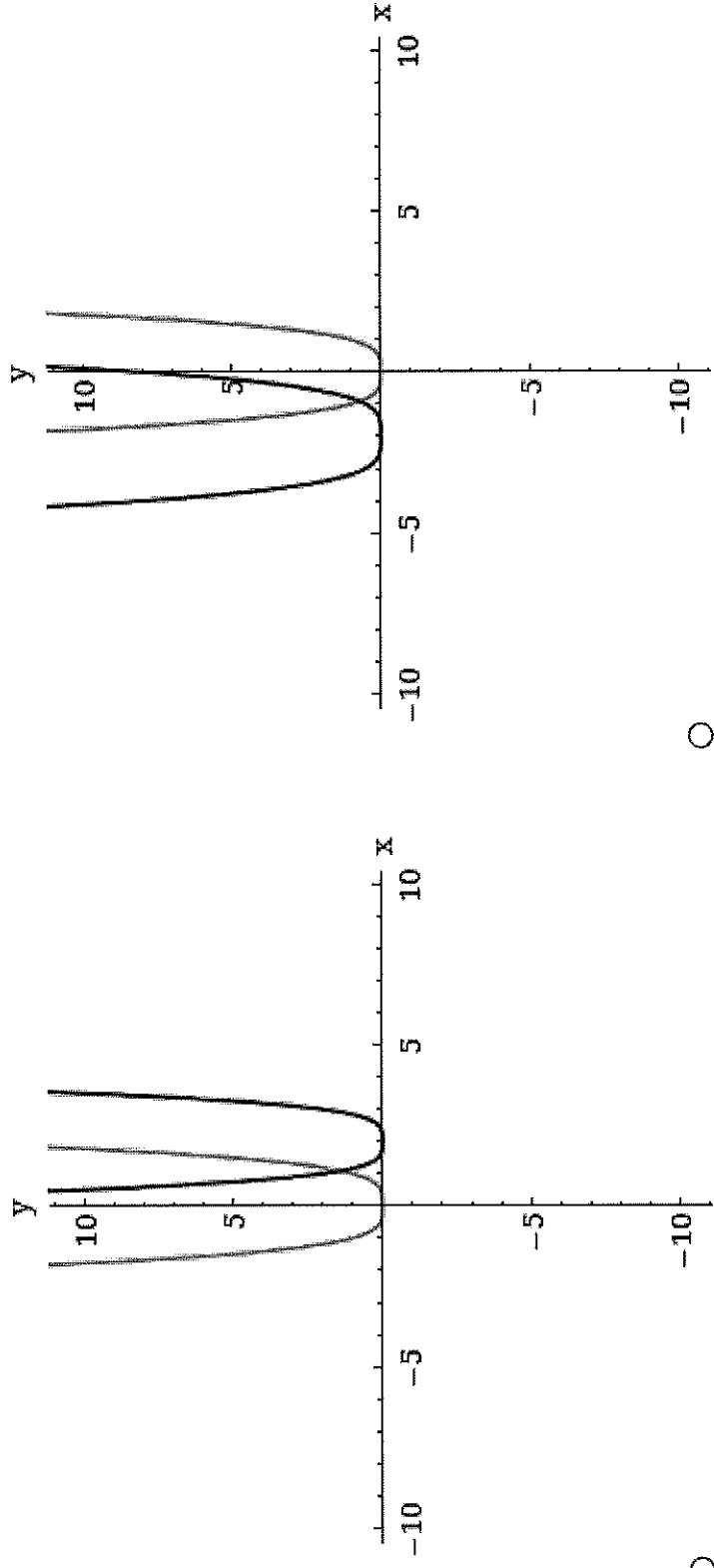




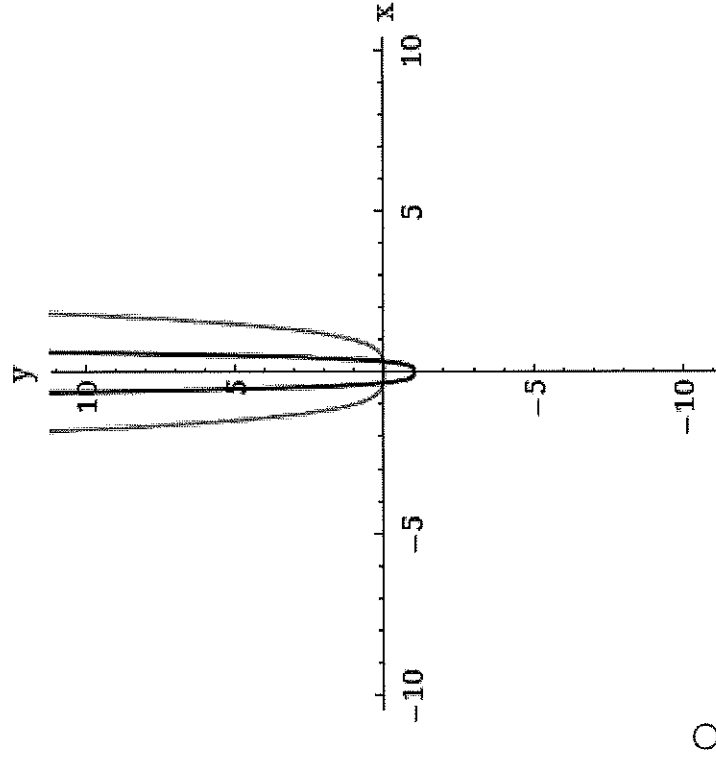
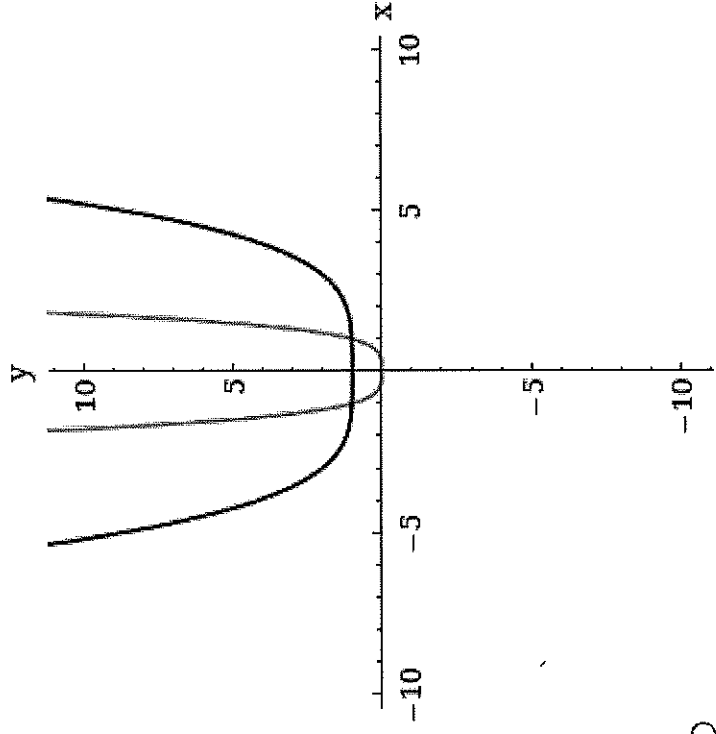
(d) $f(x) = \frac{1}{2}(x - 2)^4$

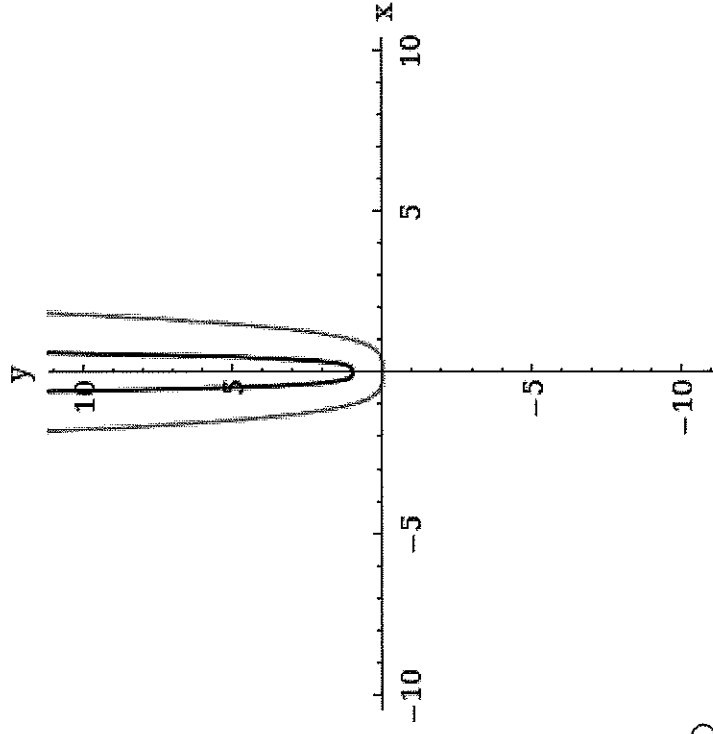


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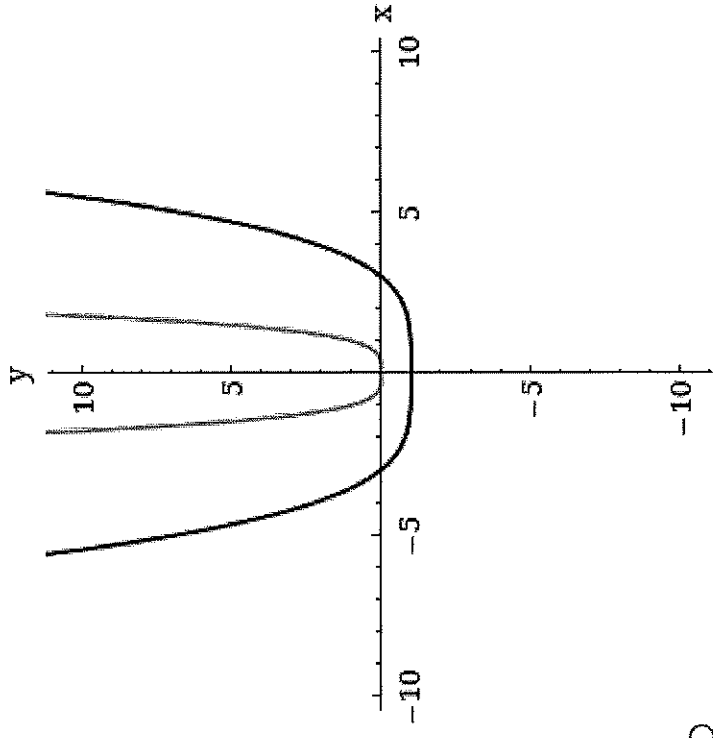
(e) $f(x) = (3x)^4 + 1$

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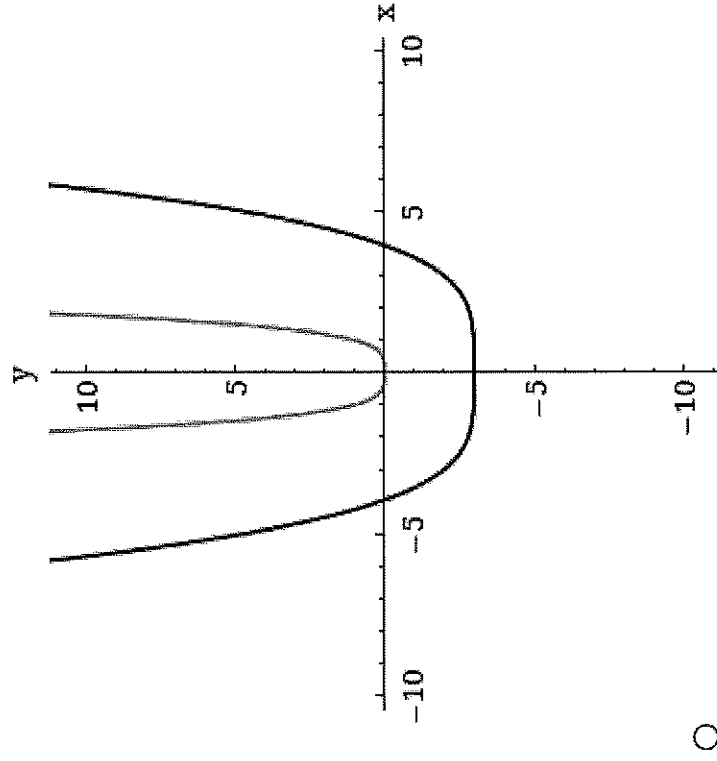
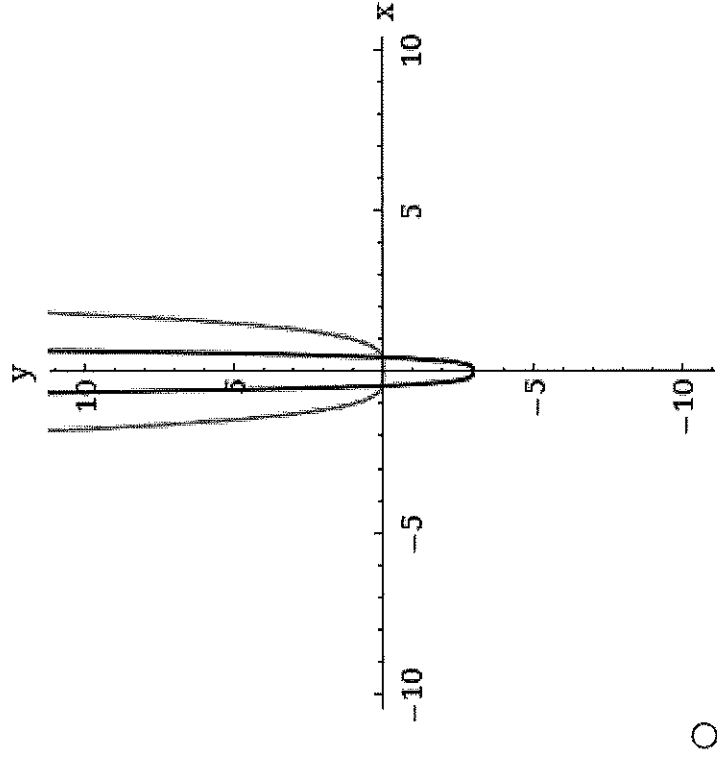


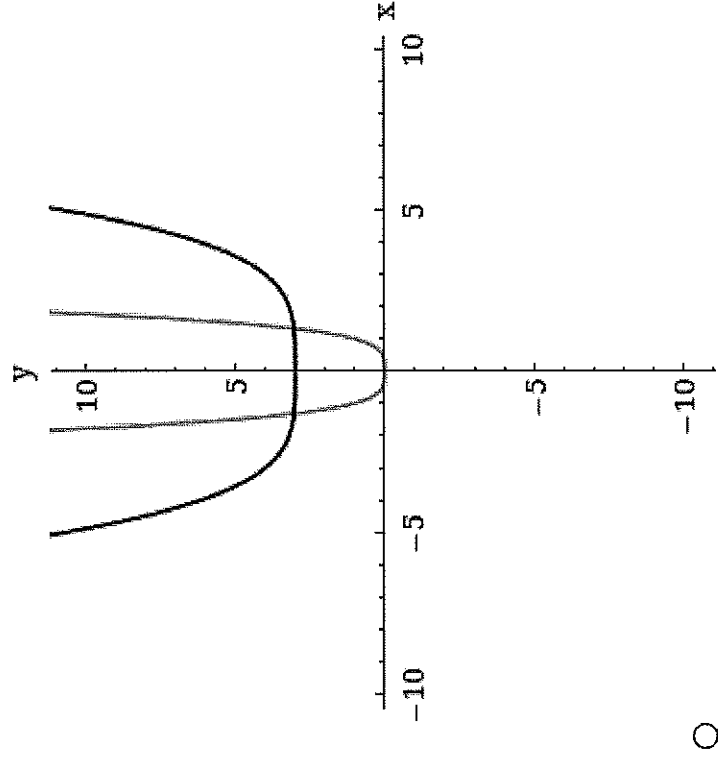
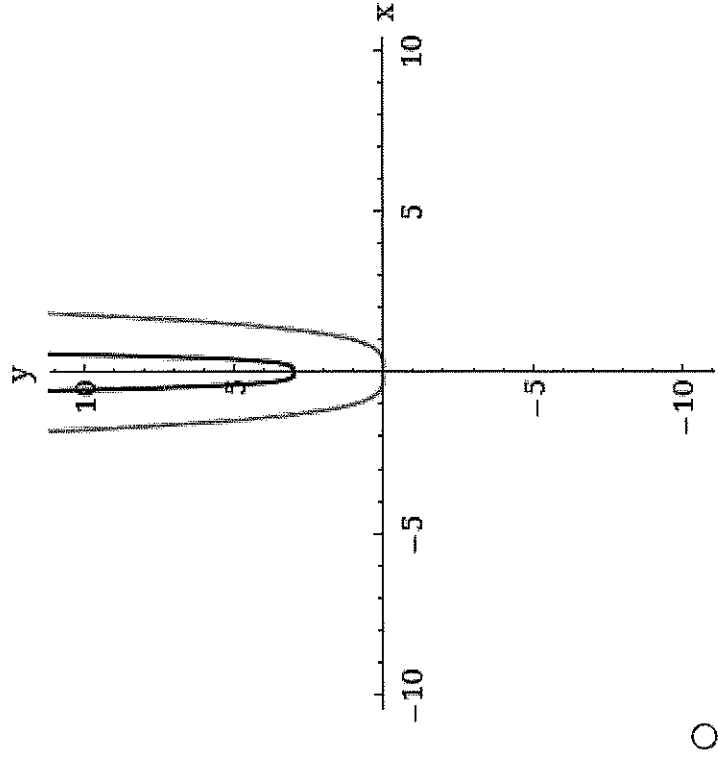
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(f) $f(x) = \left(\frac{1}{3}x\right)^4 - 3$



○

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4.

DETAILS

LARPCALC10 2.4.039.

MY NOTES

ASK YOUR TEACHER

Write the complex conjugate of the complex number.

$$3 + 3i$$

Multiply the number by its complex conjugate. (Simplify your answer completely.)

5.

DETAILS

LARPCALC10 2.5.041.

MY NOTES

ASK YOUR TEACHER

Find a polynomial function with real coefficients that has the given zeros. (There are many correct answers.)

$$1, 3i$$

$$f(x) =$$

7.

DETAILS

LARPCALC10 2.3.011.

MY NOTES

ASK YOUR TEACHER

Use long division to divide. (Simplify your answer completely.)

$$(3x^2 + 16x + 16) \div (x + 4)$$

, $x \neq -4$

8.

DETAILS

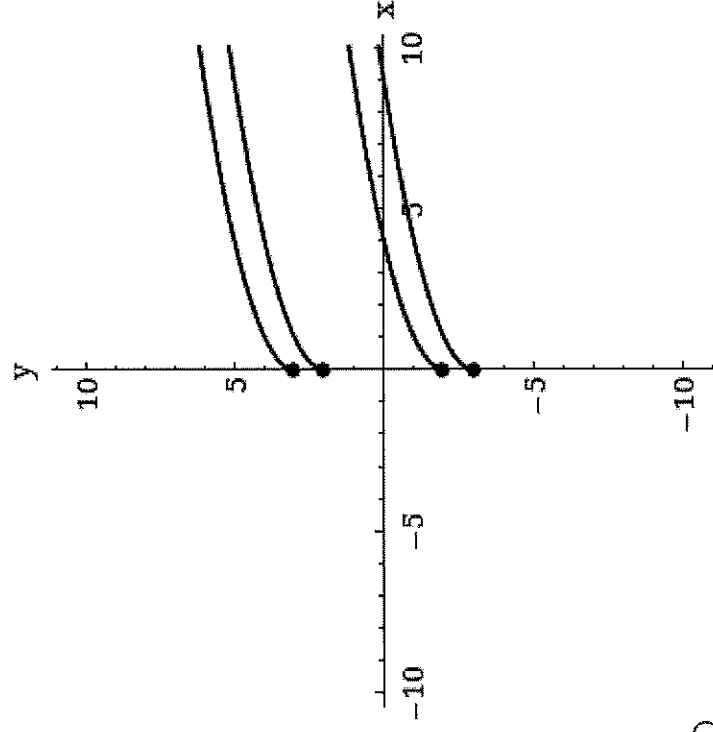
LARPCALC10 1.7.006.

MY NOTES

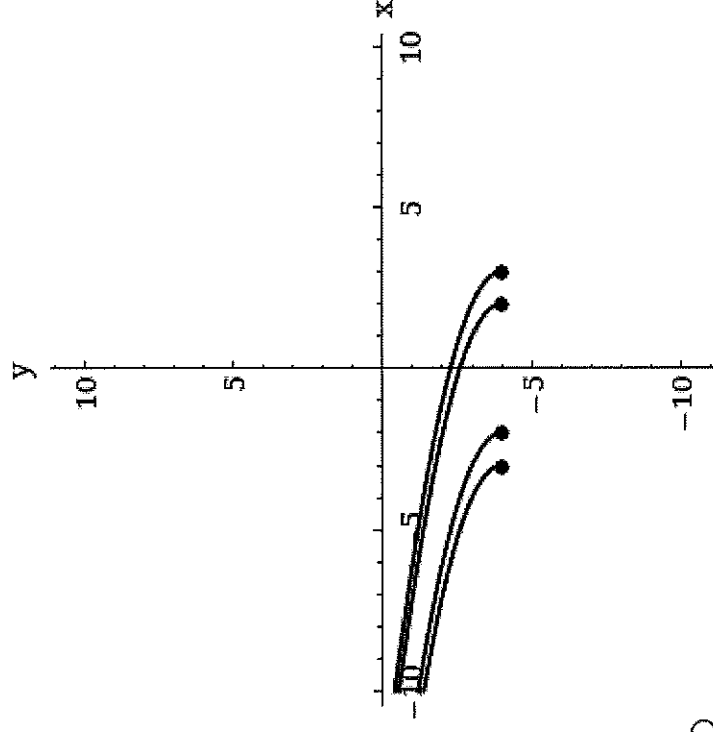
ASK YOUR TEACHER

For each function, sketch the graphs of the function when $c = -3$, -2 , 2 , and 3 on the same set of coordinate axes

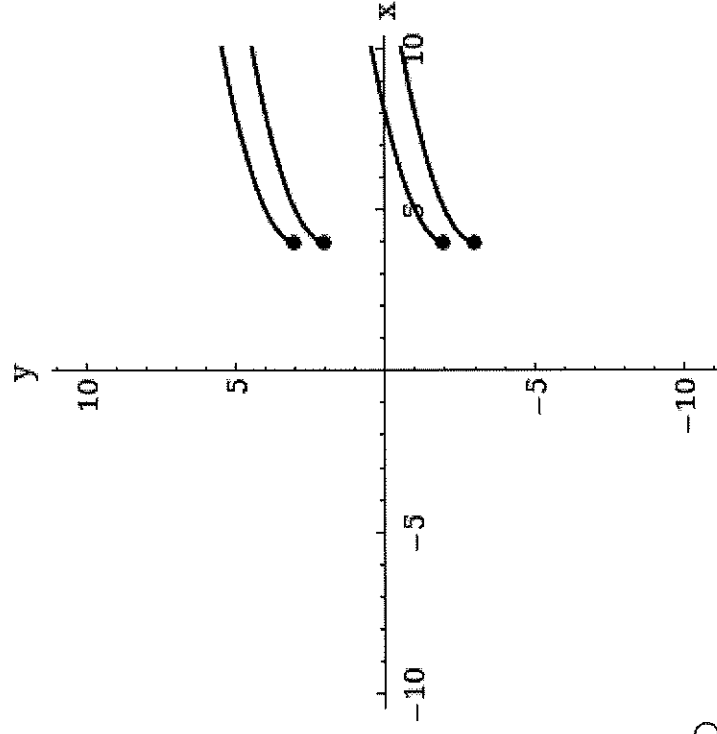
(a) $f(x) = \sqrt{x} + c$



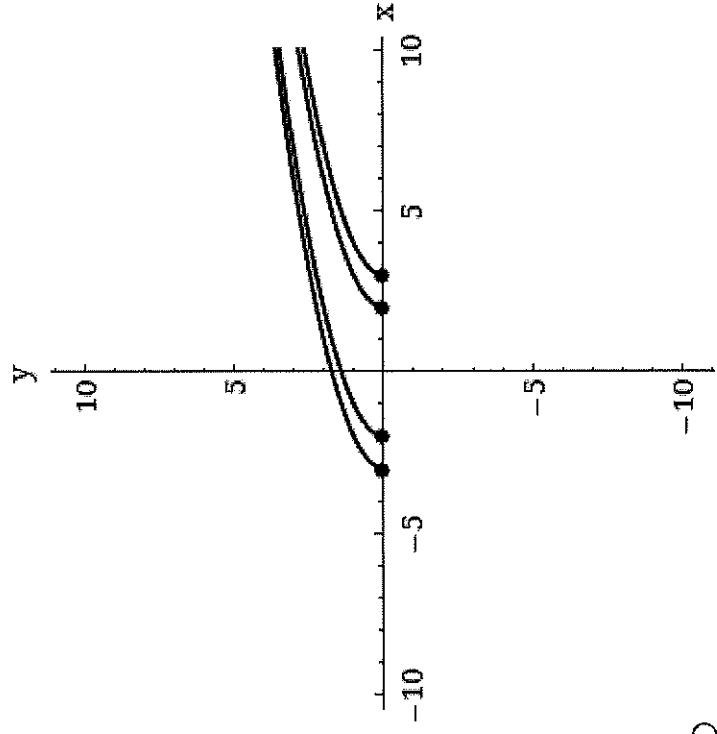
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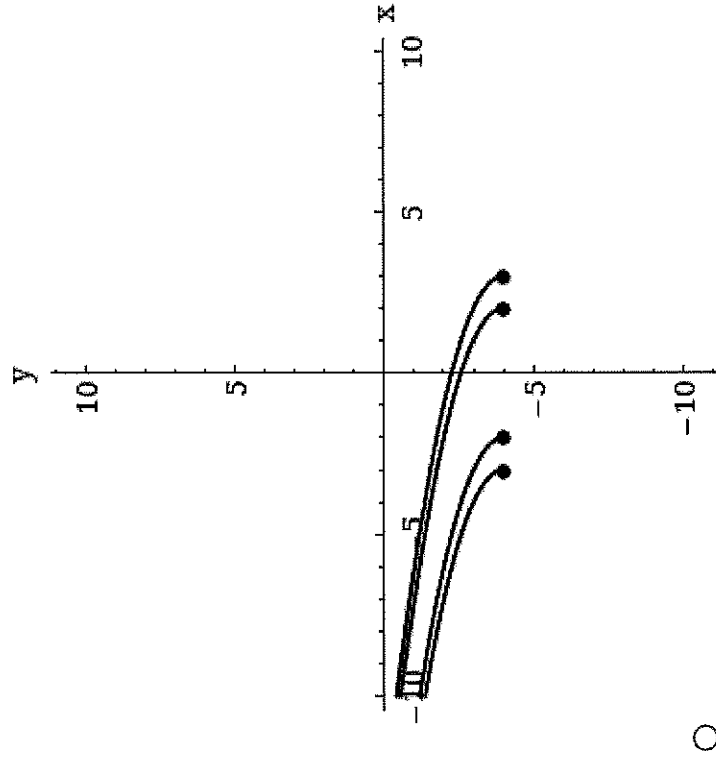


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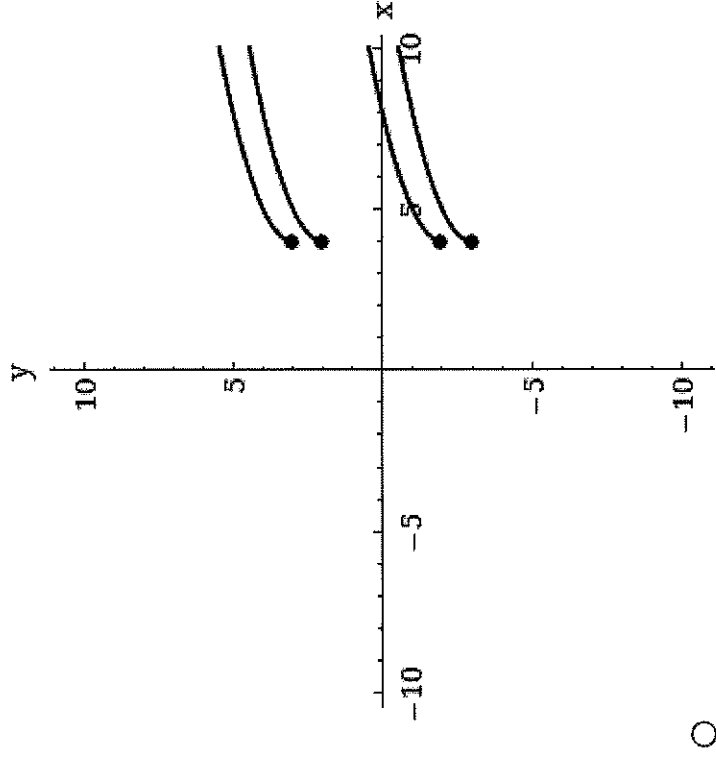


(b) $f(x) = \sqrt{x - c}$

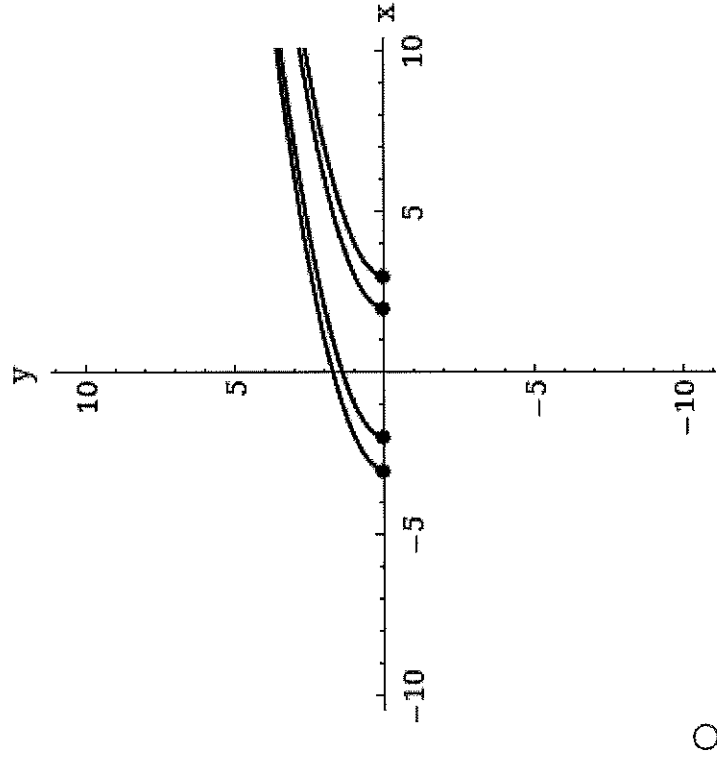
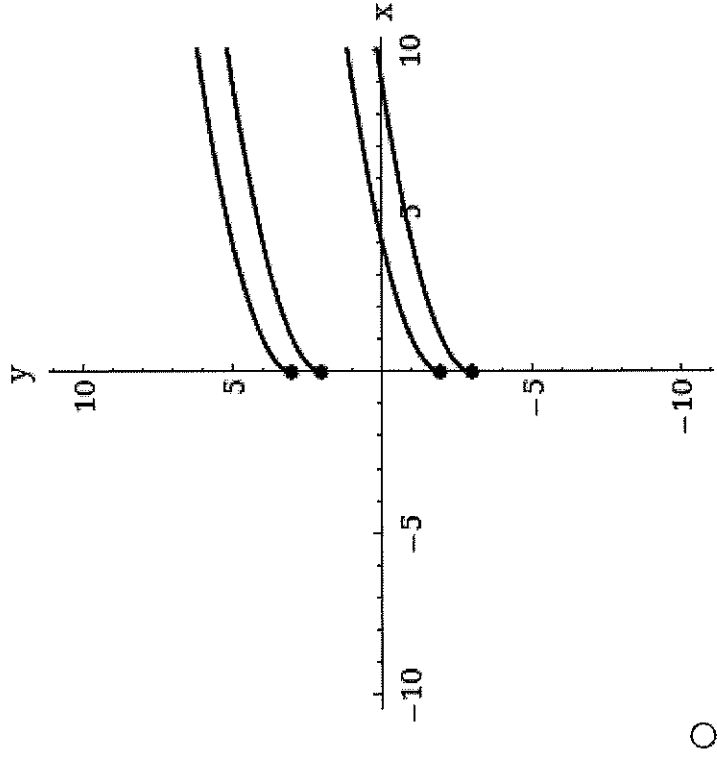




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9.

DETAILS

LARPCALC10 1.4.025.

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) $q(0)$ (b) $q(3)$ (c) $q(y + 3)$

10.

DETAILS

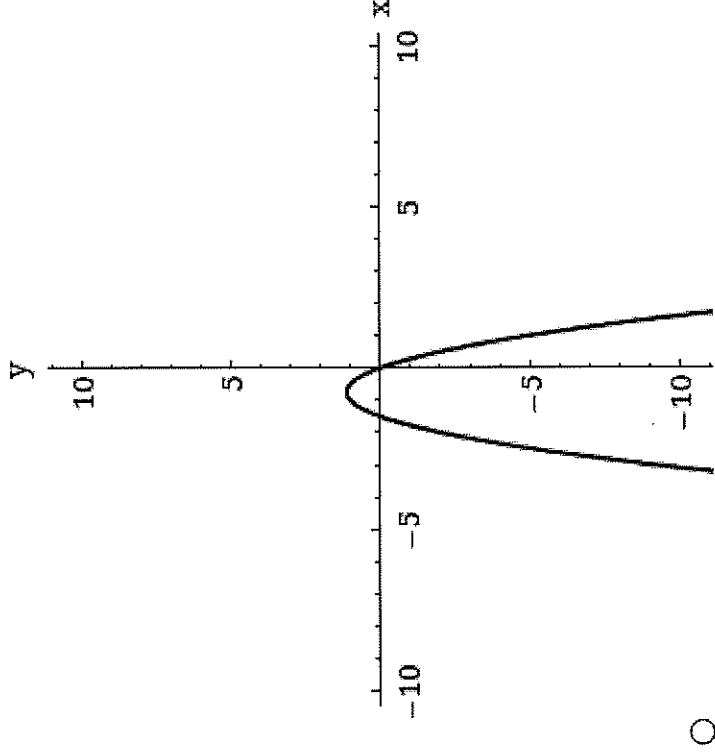
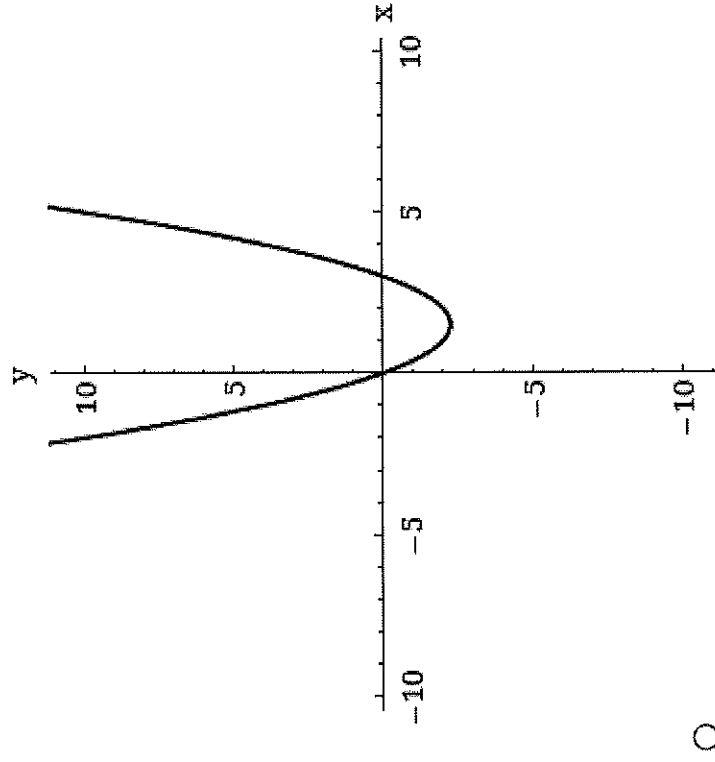
LARPCALC10 2.2.011.

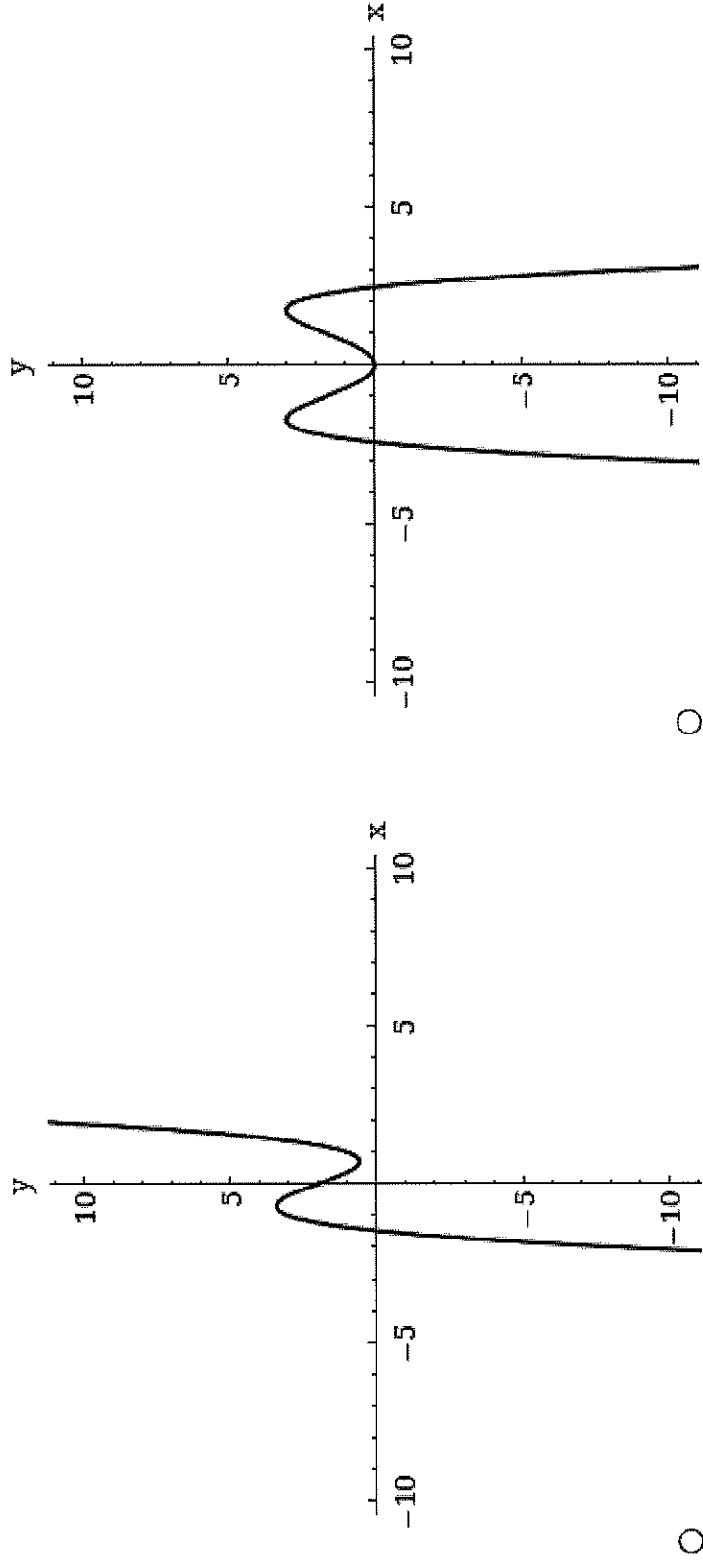
MY NOTES

ASK YOUR TEACHER

Match the polynomial function with its graph.

$$f(x) = -\frac{1}{3}x^4 + 2x^2$$





11.

DETAILS

LARPCALC10 3.4.022.

MY NOTES

ASK YOUR TEACHER

Solve the exponential equation algebraically. Approximate the result to three decimal places. (Enter your answers as a comma-separated list.)

$$3e^x = 65$$

 $x =$

12.

DETAILS

LARPCALC10 2.5.047.

MY NOTES

ASK YOUR TEACHER

Find the polynomial function f with real coefficients that has the given degree, zeros, and solution point.

Degree	Zeros	Solution Point
4	$-3, 1, i$	$f(0) = -6$

 $f(x) =$

13.

DETAILS

LARPCALC10 3.2.019.

MY NOTES

ASK YOUR TEACHER

Evaluate the logarithm at the given value of x without using a calculator.

Function	Value
$g(x) = \log_a(x)$	$x = a^{-2}$

14.

DETAILS

LARPCALC10 1.8.023.

MY NOTES

ASK YOUR TEACHER

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

$$(f/g)(-1) - g(4)$$

$$(f/g)(-1) - g(4) =$$

15.

DETAILS

LARPCALC10 1.5.018.MI.

MY NOTES

ASK YOUR TEACHER

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

$$f(x) = 7x^2 + 54x - 16$$

 $x =$

DETAILS

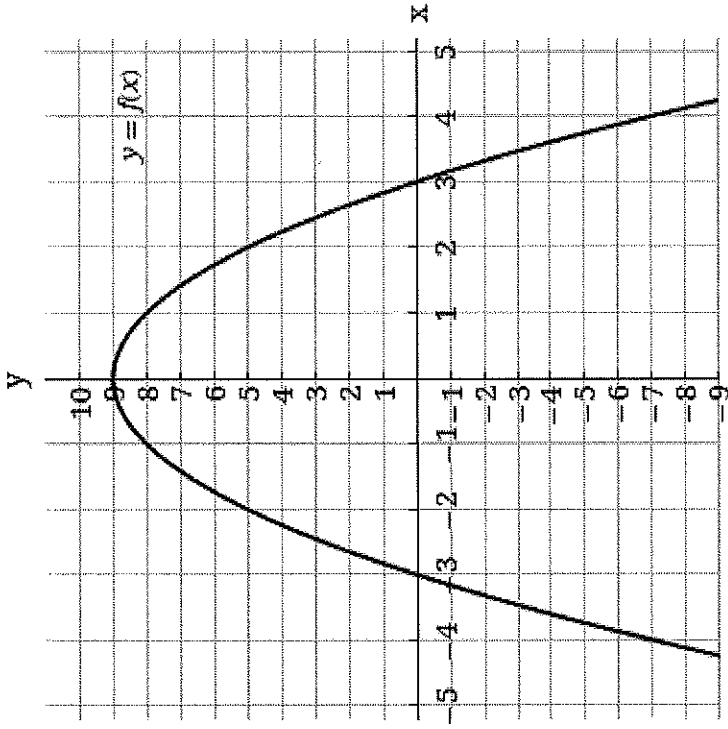
LARPCALC10 1.5.010.

MY NOTES

ASK YOUR TEACHER

16.

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



domain

range

Use the graph to find the indicated function values.

(a) $f(-4) =$

(b) $f(3) =$

(c) $f(0) =$

(d) $f(4) =$

17.

DETAILS

LARPCALC10 2.3.014.MI.

MY NOTES

ASK YOUR TEACHER

Use long division to divide.

$$(12x^3 - 28x^2 + 25x - 12) \div (3x - 4)$$

18.

DETAILS

LARPCALC10 1.4.019.

MY NOTES

ASK YOUR TEACHER

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

$$f(x) = 3x - 8$$

(a) $f(1)$ (b) $f(-3)$ (c) $f(x + 5)$

19.

DETAILS

LARPCALC10 2.6.029.

MY NOTES

ASK YOUR TEACHER

Consider the following.

$$f(x) = \frac{x - 2}{x^2 - 4}$$

(a) State the domain of the function.

- ☐ all real numbers x except $x = 2$ and $x = -2$
☐ all real numbers x except $x = -2$
☐ all real numbers x except $x = 2$
☐ all real numbers x
☐ all real numbers x except $x = 1$

(b) Identify all intercepts. (If an answer does not exist, enter DNE.)

$$(x, y) = ($$

x-intercept

)

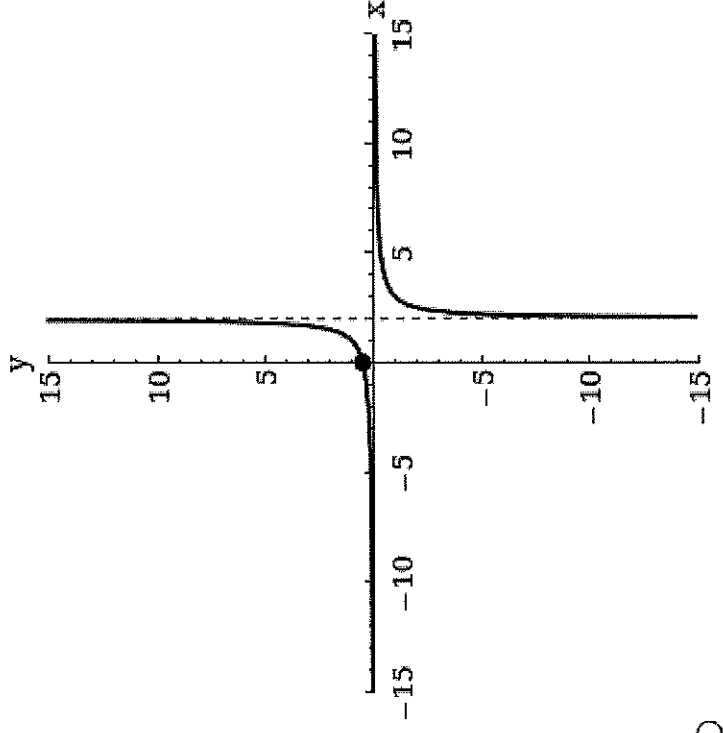
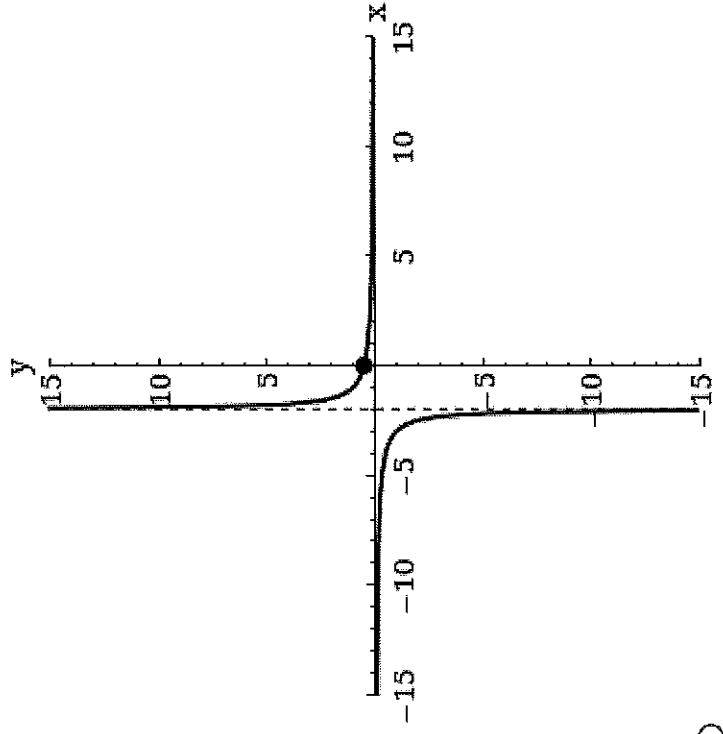
$$(x, y) = ($$

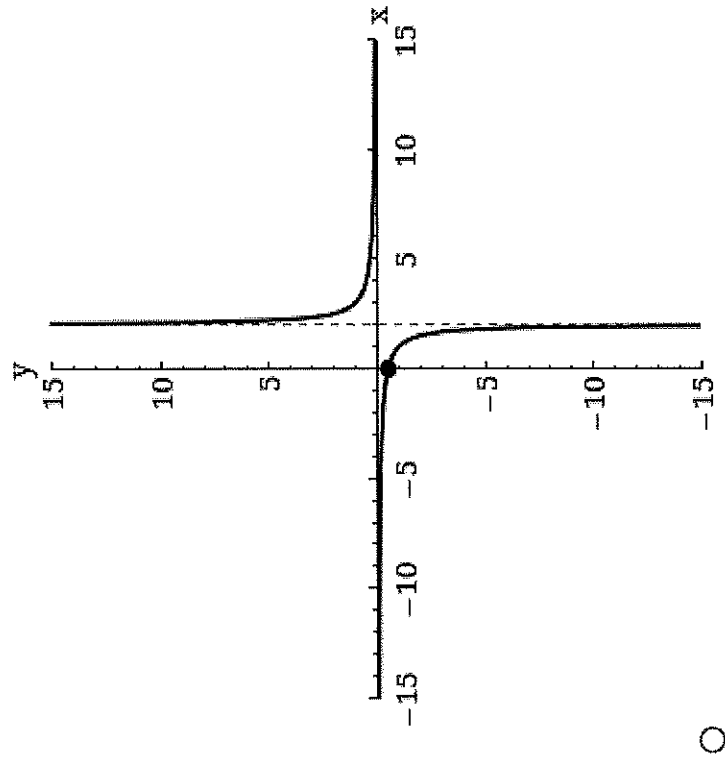
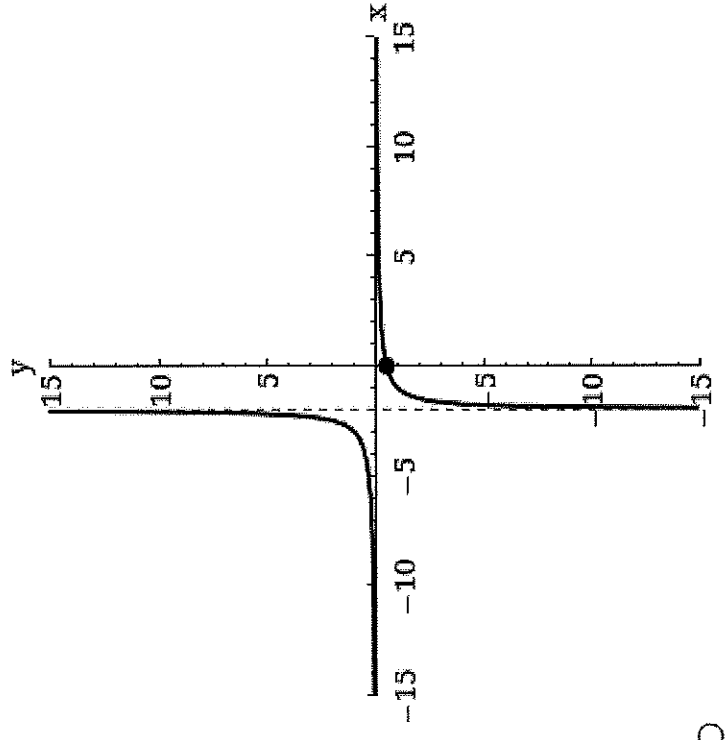
y-intercept

)

- (c) Find any vertical and horizontal asymptotes. (Enter your answers as a comma-separated list of equations. If there are no asymptotes, enter DNE.)

- (d) Plot additional solution points as needed to sketch the graph of the rational function.



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20.

DETAILS

LARPCALC10 3.1.020.

MY NOTES

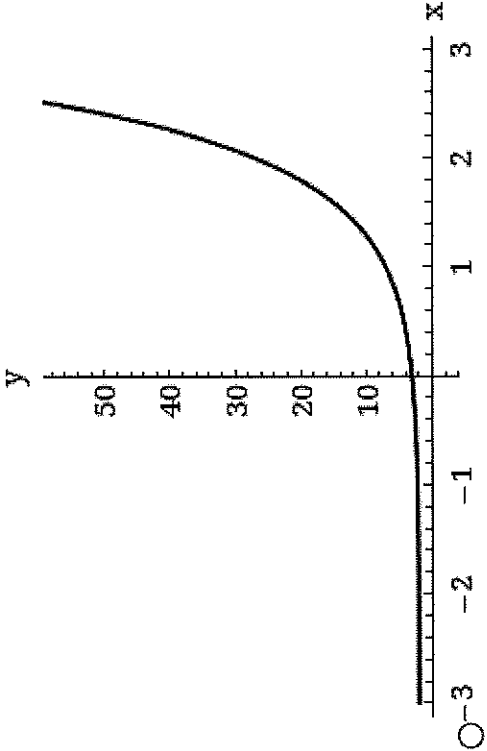
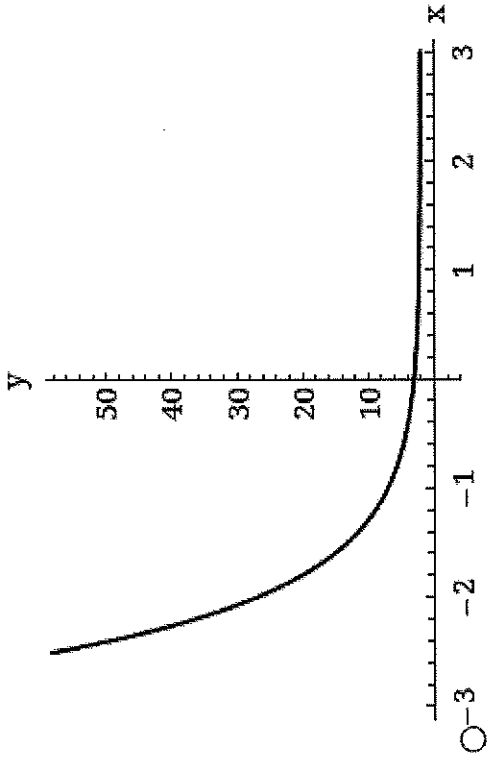
ASK YOUR TEACHER

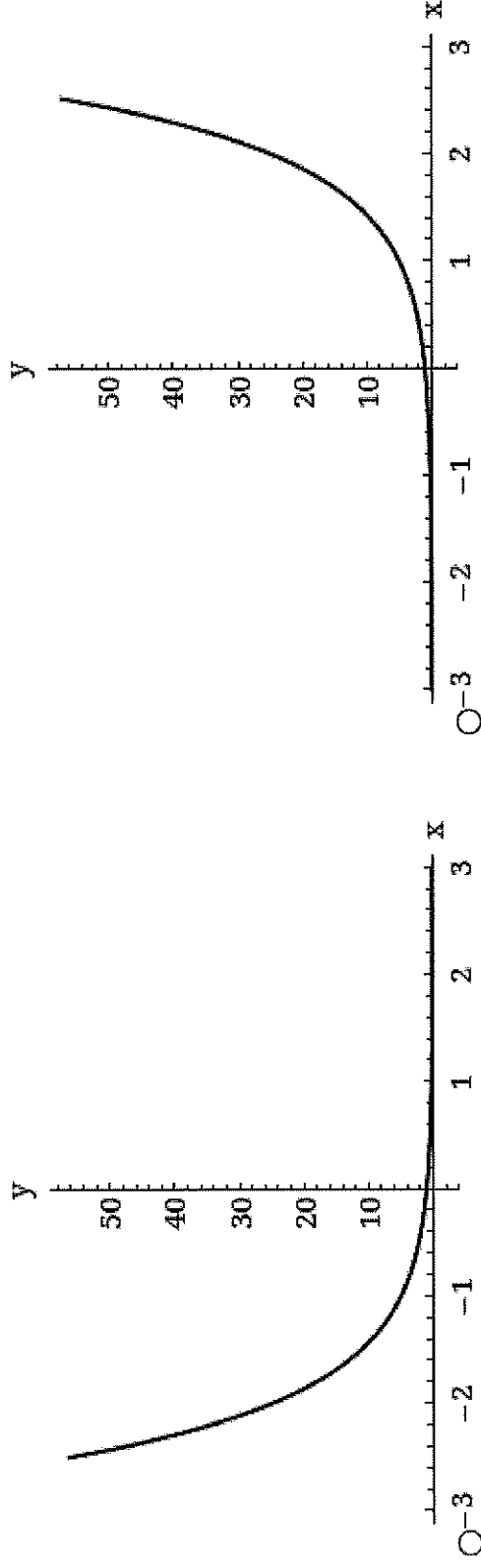
Use a graphing utility to construct a table of values for the function.

$$f(x) = \left(\frac{1}{5}\right)^x$$

x	-2	-1	0	1	2
f(x)					

Sketch the graph of the function.





21.

DETAILS

LARPCALC10 3.3.017.

MY NOTES

ASK YOUR TEACHER

Use the properties of logarithms to write the logarithm in terms of $\log_7(2)$ and $\log_7(5)$.

$$\log_7\left(\frac{14}{5}\right)$$

22.

DETAILS

LARPCALC10 2.7.042.

MY NOTES

ASK YOUR TEACHER

Solve the inequality. (Enter your answer using interval notation.)

$$\frac{x^2 - 36}{x} < 0$$

Graph the solution set.

Use the tools to enter your answer.



NO SOLUTION

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23.

DETAILS

LARPCALC10 1.8.007.

MY NOTES

ASK YOUR TEACHER

Find the following.

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

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

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

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

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

What is the domain of f/g ?

24.

DETAILS

LARPCALC10 1.5.016.

MY NOTES

ASK YOUR TEACHER

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

$$f(x) = 29 - 2x$$

x =

25.

DETAILS

LARPCALC10 2.1.017.

MY NOTES

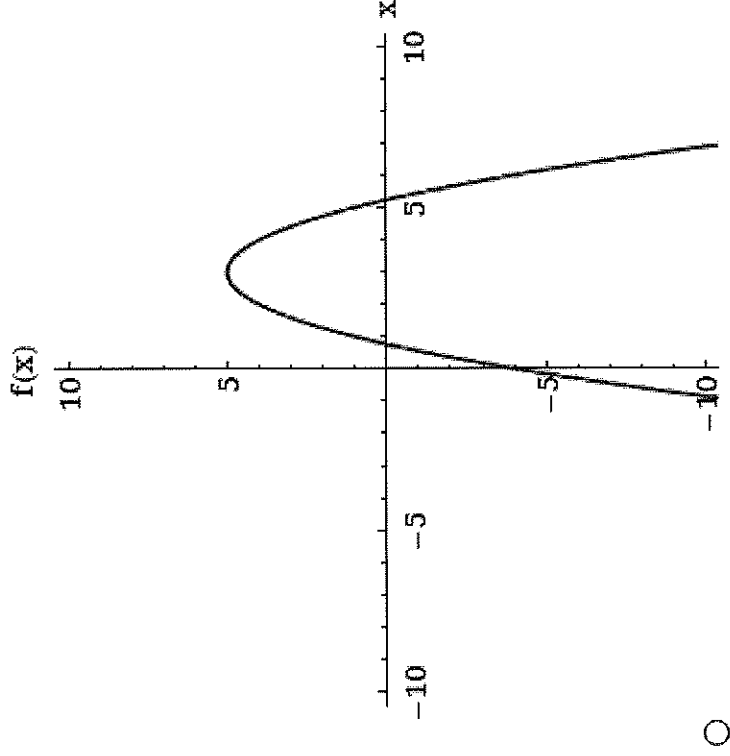
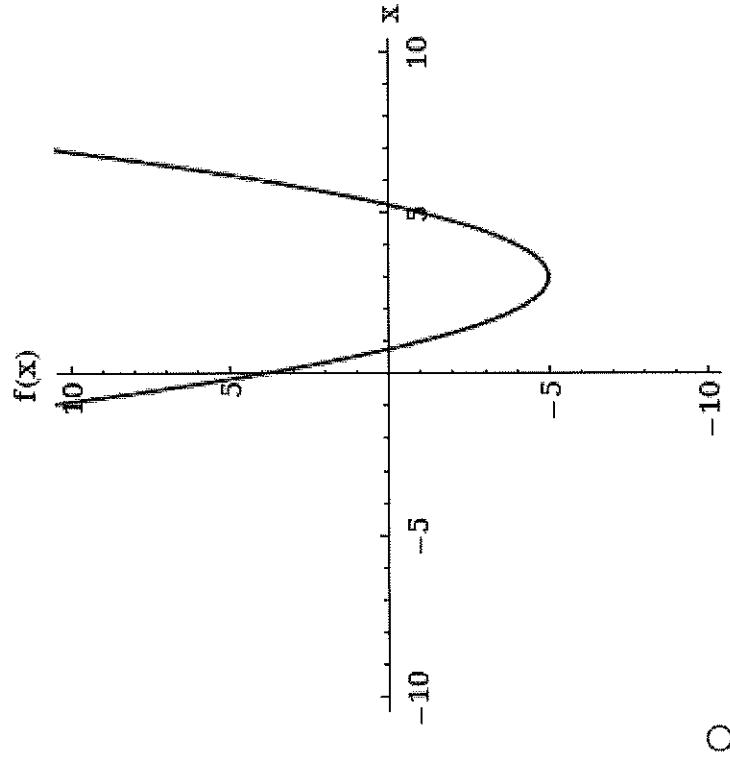
ASK YOUR TEACHER

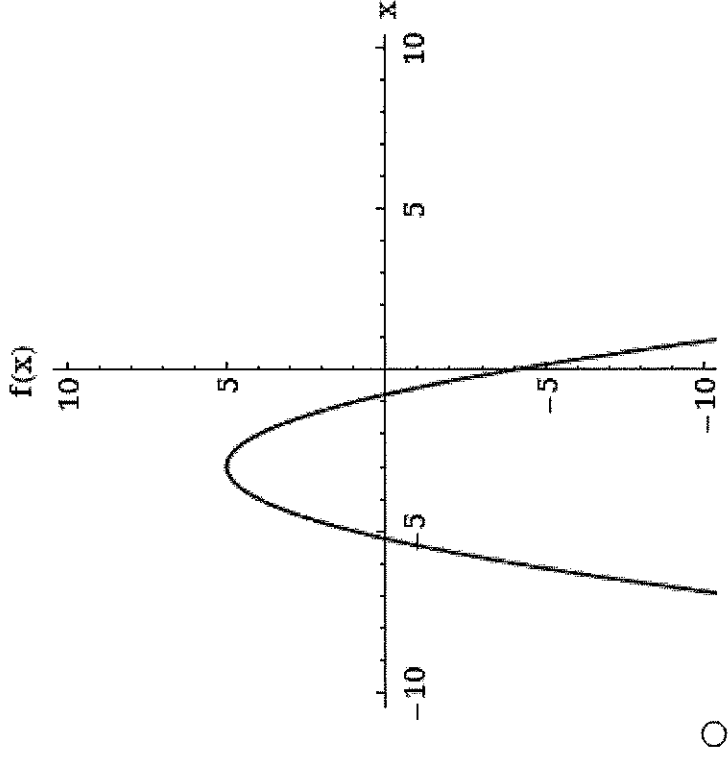
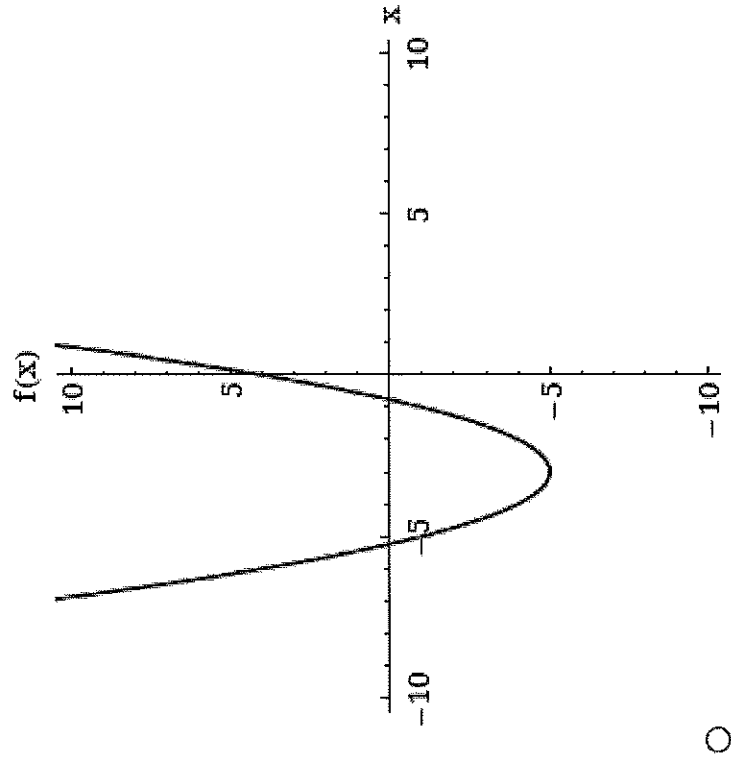
Write the quadratic function in standard form.

$$f(x) = x^2 - 6x + 4$$

 $f(x) =$

Sketch its graph.





Identify the vertex, axis of symmetry, and x-intercept(s). (If an answer does not exist, enter DNE.)

vertex

$$(x, f(x)) = (\quad)$$

axis of symmetry

x-intercept

$$(x, f(x)) = (\quad)$$

(smaller x-value)

x-intercept

$(x, f(x)) = ($

(larger x-value)

)

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