

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.

1. [-/8 Points]

DETAILS

TAALMANCALC1 0.1.001.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Determine whether each of the statements that follow is true or false.

(a) Functions are the same as equations.

- True
 False

(b) The domain of every function is a subset of \mathbb{R} .

- True
 False

(c) The function that for each x has output $f(x) = 3$ is a one-to-one function.

- True
 False

(d) Every global maximum of a function is also a local maximum.

- True
 False

(e) Every local minimum of a function is also a global minimum.

- True
 False

(f) The graph of a function can never cross one of its asymptotes.

- True
 False

(g) Average rates of change can be thought of as slopes.

- True
 False

(h) A function can have different average rates of change on different intervals.

- True
 False

Show My Work (Optional) 

2. [-/2 Points]

DETAILS

TAALMANCALC1 0.1.006.

MY NOTES

ASK YOUR TEACHER

Use set notation to define the range of a function.

- $\{x \in \mathbb{R} \mid f(x) \text{ is defined}\}$
- $\{y \in \mathbb{R} \mid \text{there is some } x \in \text{Domain}(f) \text{ for which } f(x) = y\}$

Use the same notation to express the range of the function $f(x) = x^2$.

- $\{x \in \mathbb{R}\}$
- $\{y \in \mathbb{R} \mid y < 0\}$
- $\{x \in \mathbb{R} \mid x > 0\}$
- $\{y \in \mathbb{R} \mid y \geq 0\}$
- $\{x \in \mathbb{R} \mid x \leq 0\}$

Show My Work (Optional) 

3. [-/3 Points]

DETAILS

TAALMANCALC1 0.1.027.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

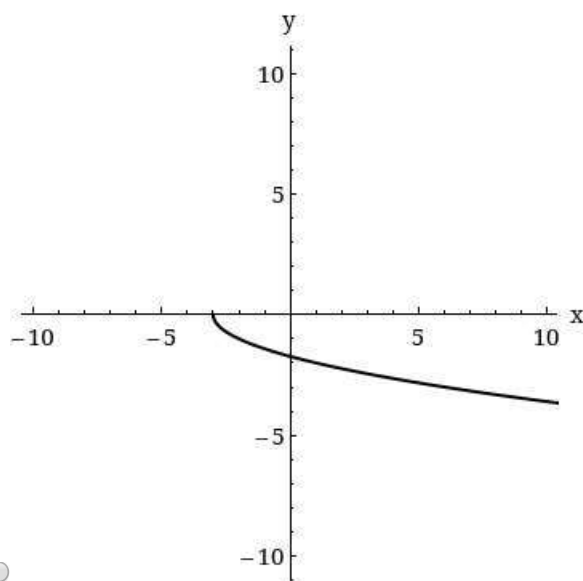
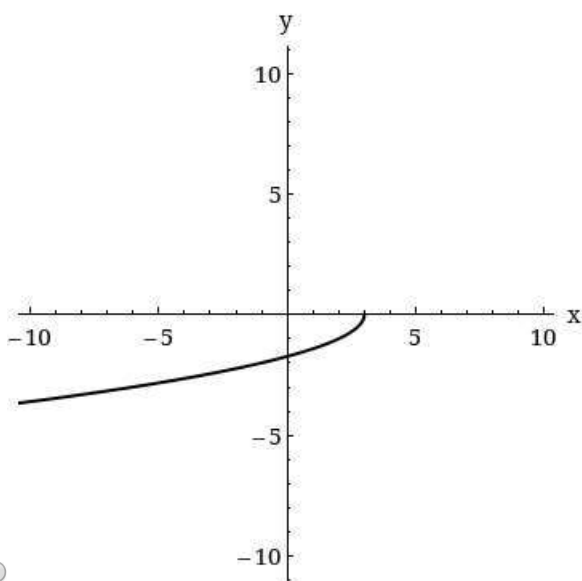
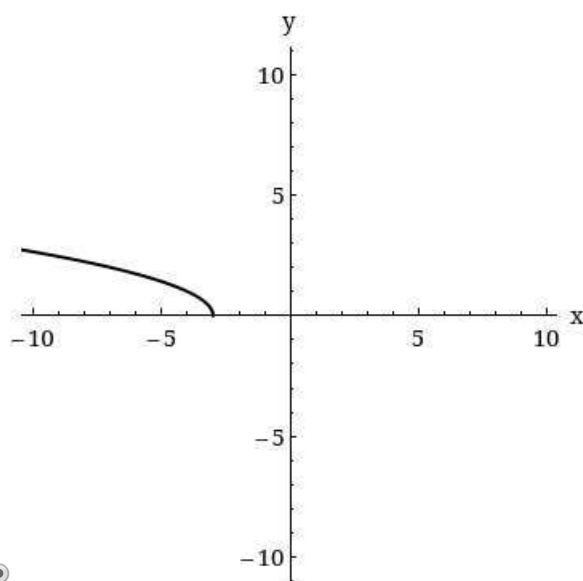
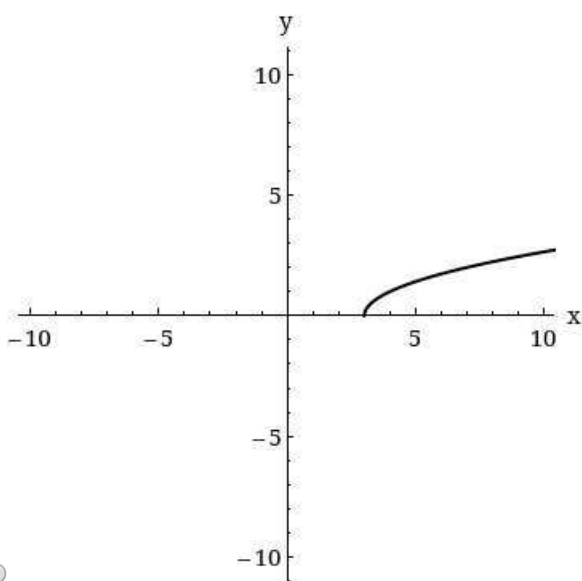
Find the domain and range of the function. (Enter your answers using interval notation.)

$$f(x) = \sqrt{x - 3}$$

domain

range

Use a graphing utility or plot points to sketch a graph of the function.



Show My Work (Optional)

4. [-/2 Points]

DETAILS

TAALMANCALC1 0.1.036.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the domain of the function. (Enter your answer using interval notation.)

$$f(x) = \frac{1}{\sqrt{x^2 - 64}}$$

Show My Work (Optional) ?

5. [-/2 Points]

DETAILS

TAALMANCALC1 0.1.042.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the domain of the function. (Enter your answer using interval notation.)

$$f(x) = \frac{\sqrt{x^2 - 25}}{\sqrt{x^2 - 81}}$$

Show My Work (Optional) ?

6. [-/8 Points]

DETAILS

TAALMANCALC1 0.2.001.

MY NOTES

ASK YOUR TEACHER

Determine whether each of the statements that follow is true or false.

- (a) The domain of a function of the form $f + g$ is equal to the domain of f or the domain of g , whichever is smaller.
- True
- False
- (b) The domain of a function of the form $f \cdot g$ is equal to the intersection of the domains of f and g .
- True
- False
- (c) If the graph of $y = f(x)$ contains the point (a, b) , then the graph of $y = f(x) + C$ must contain the point $(a, b + C)$.
- True
- False
- (d) If the graph of $y = f(x)$ contains the point (a, b) , then the graph of $y = f(x + C)$ must contain the point $(a + C, b)$.
- True
- False
- (e) The inverse of the one-to-one function $f(x) = x^5$ is $f^{-1}(x) = x^{-5}$.
- True
- False
- (f) If f is an invertible function, then $f^{-1} = \frac{1}{f}$.
- True
- False
- (g) Every even function is a function that involves only even exponents.
- True
- False
- (h) If f is an even function and $(0, b)$ is a point on the graph of $y = f(x)$, then $(0, -b)$ must also be on the graph of $y = f(x)$.
- True
- False

Show My Work (Optional) 

7. [-/7 Points]

DETAILS

TAALMANCALC1 0.2.034.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

The table that follows defines three functions f , g , and h .

x	0	1	2	3	4	5	6
$f(x)$	0	6	0	6	0	4	1
$g(x)$	0	4	3	2	0	2	1
$h(x)$	3	6	4	0	0	3	1

Create an additional row for the table for the function $(g \circ h)(x)$.

x	0	1	2	3	4	5	6
$(g \circ h)(x)$							

Show My Work (Optional) ?

8. [-/4 Points]

DETAILS

TAALMANCALC1 0.2.067.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use this [definition](#) to show that the pair of functions are inverses of each other.

$$f(x) = 4 - 7x \text{ and } g(x) = -\frac{1}{7}x + \frac{4}{7}$$

$$4 - 7\left(\right.$$

$$f(g(x)) =$$

=

$$-\frac{1}{7}\left(\right.$$

$$g(f(x)) =$$

+ $\frac{4}{7}$ =

Show My Work (Optional) ?

9. [-/2 Points]

DETAILS

TAALMANCALC1 0.2.080.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the inverse of the function. Then check your answer by graphing f and f^{-1} .

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

$f^{-1}(x) =$

Show My Work (Optional) ?

10. [-/4 Points]

DETAILS

TAALMANCALC1 0.2.501.XP.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Calculate the composite functions $f \circ g$ and $g \circ f$, and determine their domains.

$$f(x) = \sqrt{x}, \quad g(x) = x + 1$$

$f \circ g =$

Domain:

- $x \geq 0$
- $x > -1$
- $x \geq -1$
- all real numbers
- $x < 0$

$g \circ f =$

Domain:

- $x \geq -1$
- all real numbers
- $x > -1$
- $x > 0$
- $x \geq 0$

Show My Work (Optional) ?

11. [-/2 Points]

DETAILS

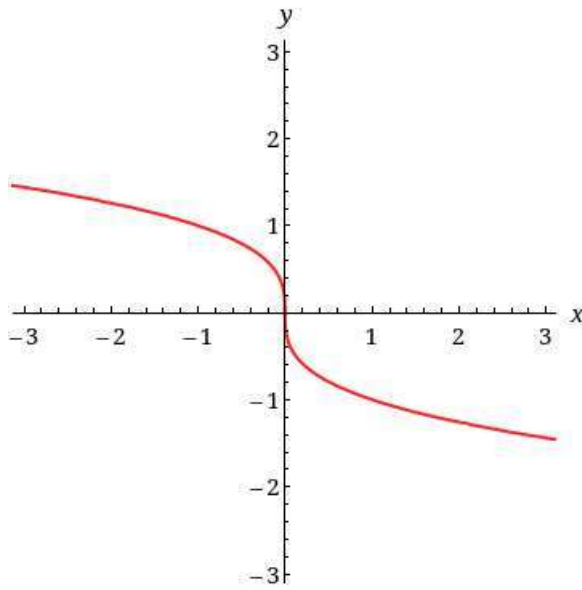
TAALMANCALC1 0.3.020.

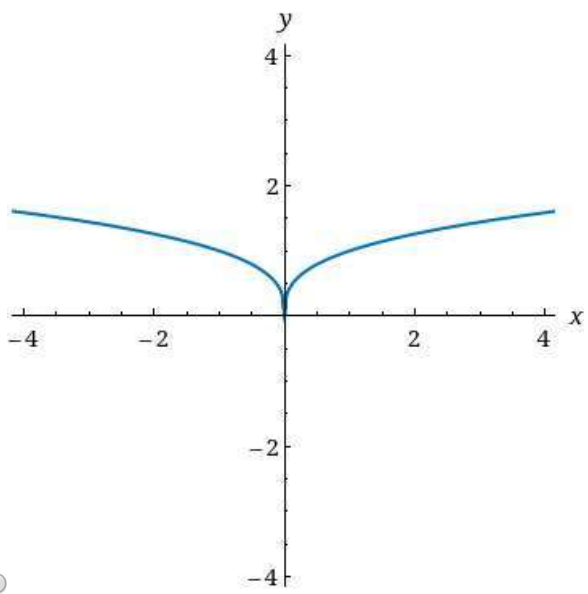
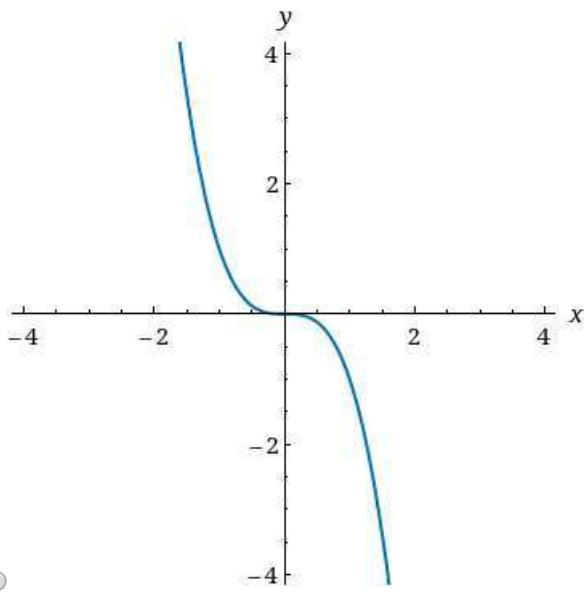
MY NOTES

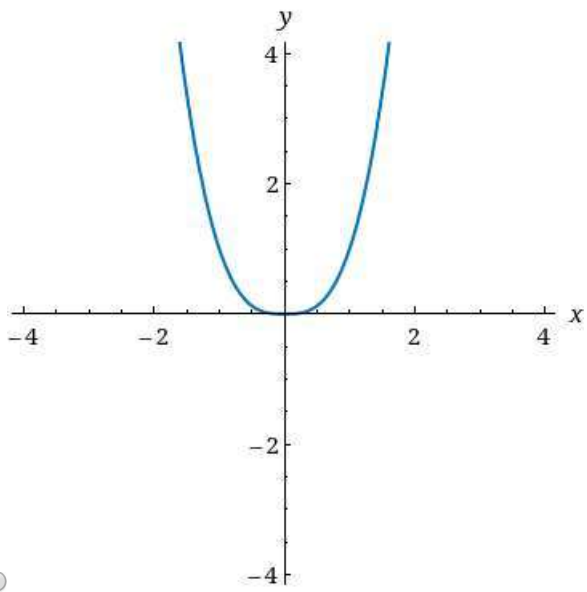
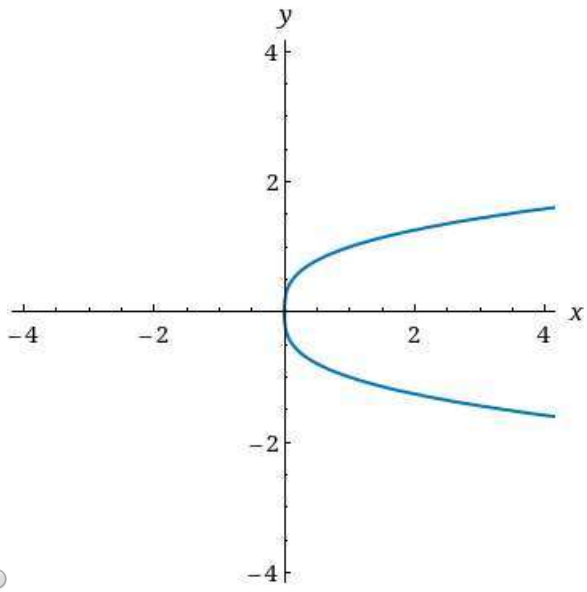
ASK YOUR TEACHER

PRACTICE ANOTHER

For the given graph $y = f(x)$, sketch the graph of $y = |f(x)|$.







Show My Work (Optional) [?](#)

12. [-/2 Points]

DETAILS

TAALMANCALC1 0.3.029.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Consider the function below.

$$f(x) = (x^2 - 64)^{-1/10}$$

Find the domain of the function. (Enter your answer using interval notation.)

Find the zeroes of the function. (Enter your answers as a comma-separated list. If an answer does not exist, enter DNE.)

x =

Show My Work (Optional) ?

13. [-/2 Points]

DETAILS

TAALMANCALC1 0.3.031.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Consider the function below.

$$f(x) = \frac{\sqrt{1-x}}{\sqrt[3]{x^2 - 2x - 48}}$$

Find the domain of the function. (Enter your answer using interval notation.)

Find the zeroes of the function. (Enter your answers as a comma-separated list. If an answer does not exist, enter DNE.)

x =

Show My Work (Optional) ?

14. [-/2 Points]

DETAILS

TAALMANCALC1 0.3.035.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the equation for the function described below. (Let x be the independent variable and y be the dependent variable.)

The linear function whose graph has slope -6 and passes through the point $(6, 5)$

Show My Work (Optional) ?

15. [-/2 Points]

DETAILS

TAALMANCALC1 0.3.037.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the equation for the function described below. (Let x be the independent variable and y be the dependent variable.)

The linear function whose graph is parallel to $y = 6x + 2$ and passes through the point $(-2, 4)$

Show My Work (Optional) ?

16. [-/8 Points]

DETAILS

TAALMANCALC1 0.3.076.

MY NOTES

ASK YOUR TEACHER

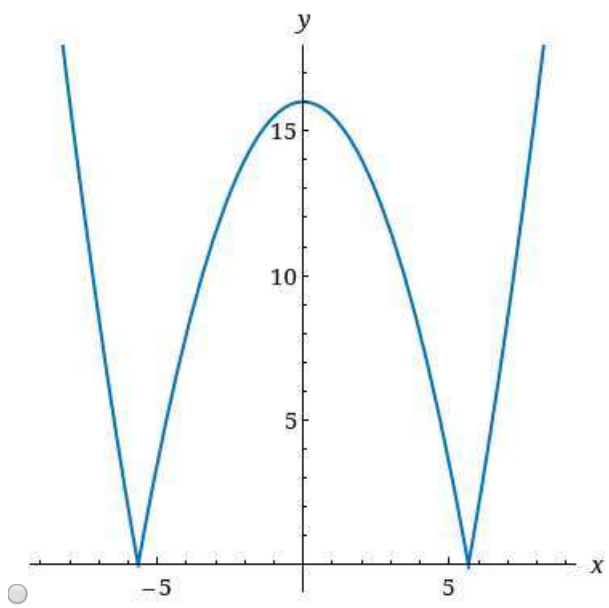
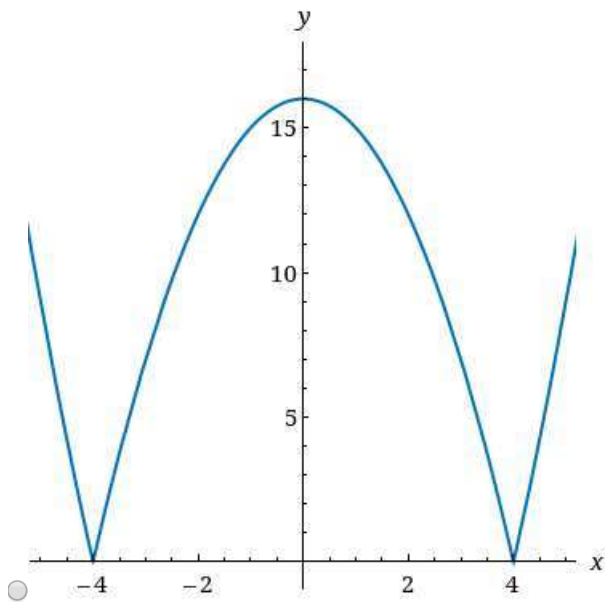
PRACTICE ANOTHER

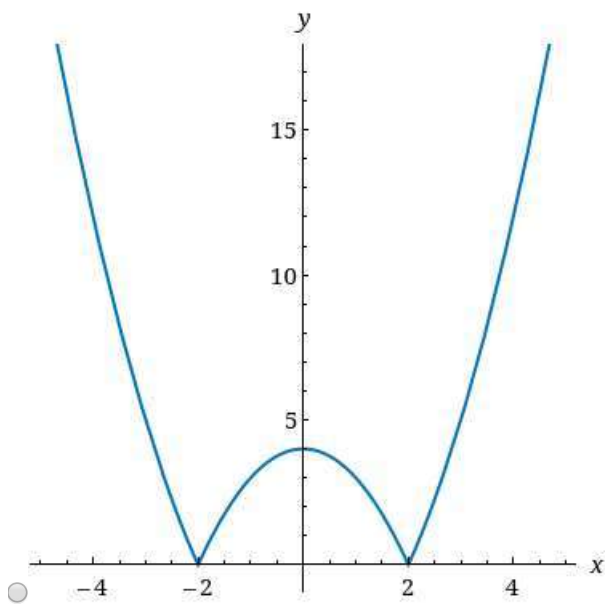
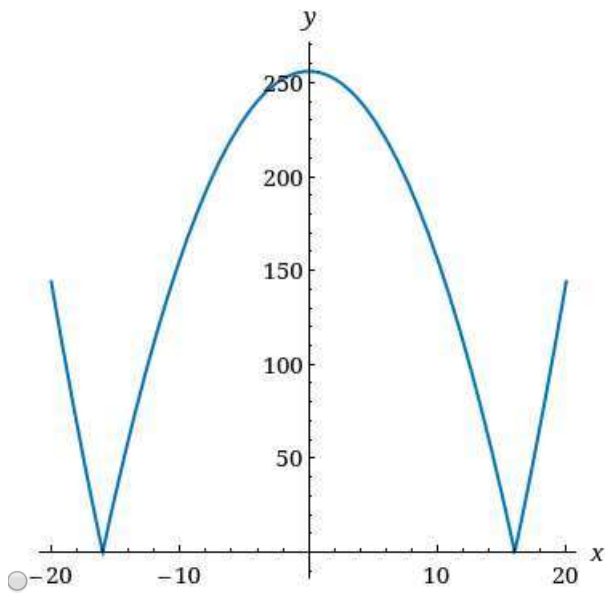
Write the given function as a piecewise-defined function where each piece is defined on an interval of x -values.

$$f(x) = |x^2 - 16|$$

		$x \leq$	
$f(x) =$	{		
		$< x <$	
		$x \geq$	

Sketch a graph of the piecewise-defined function.





Show My Work (Optional) [?](#)

17. [-/8 Points]

DETAILS

TAALMANCALCIP1 0.1.001.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Determine whether each of the statements that follow is true or false.

- (a) Every real number is either rational or irrational, but not both.
- True
- False
- (b) Every nonpositive number is less than zero.
- True
- False
- (c) $1.7 \in \{x \in \mathbb{R} \mid x - 1 > 0\}$
- True
- False
- (d) If $a \in \mathbb{R}$, then $-a$ is negative.
- True
- False
- (e) $|0| = 0$
- True
- False
- (f) The distance between any point in the coordinate plane and itself is zero.
- True
- False
- (g) If (a, b) is in the second quadrant of the Cartesian plane, then $a > 0$ and $b < 0$.
- True
- False
- (h) If $x \in A \cap B$, then x is an element of A or x is an element of B , but not both.
- True
- False

eBook

Show My Work (Optional) ?

18. [-/2 Points]

DETAILS

TAALMANCALCIP1 0.1.020.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Use set notation to describe the following.

(a) the intersection $A \cap B$

- $\{x \mid x \notin A \text{ or } x \in B\}$
- $\{x \mid x \in A \text{ or } x \in B\}$
- $\{x \mid x \in A \text{ and } x \in B\}$
- $\{x \mid x \notin A \text{ and } x \notin B\}$
- $\{x \mid x \in A \text{ and } x \notin B\}$

(b) the union $A \cup B$ of two sets A and B

- $\{x \mid x \notin A \text{ or } x \in B\}$
- $\{x \mid x \in A \text{ or } x \in B\}$
- $\{x \mid x \in A \text{ and } x \in B\}$
- $\{x \mid x \notin A \text{ and } x \notin B\}$
- $\{x \mid x \in A \text{ and } x \notin B\}$

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Show My Work (Optional) 

21. [-/2 Points]

DETAILS

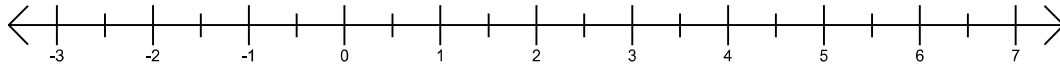
TAALMANCALCIP1 0.1.056.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

The subset of the real numbers shown below can be interpreted in terms of distance. Express the subset with absolute value inequalities.



NO SOLUTION

WebAssign NumberLine

$0 < |x + 2| < \frac{3}{2}$

$0 < \left| x - \frac{3}{2} \right| < 2$

$0 < |x - 2| < \frac{3}{2}$

$0 \leq |x + 2| < \frac{3}{2}$

$0 < \left| x - \frac{3}{2} \right| < 2$

eBook

Show My Work (Optional) ?

24. [-/2 Points]

DETAILS

TAALMANCALCIP1 0.2.070.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the solution set of the system of equations. (If there is no real solution, enter NO REAL SOLUTION.)

$$\begin{cases} x^2 + y = 0 \\ y - x = 2 \end{cases}$$

$(x, y) = ($

)

eBook

Show My Work (Optional) ?

26. [-/3 Points]

DETAILS

TAALMANCALCIP1 0.3.038.

MY NOTES

ASK YOUR TEACHER

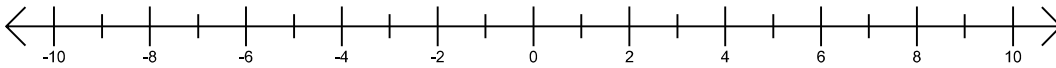
PRACTICE ANOTHER

Find the solution set of the given inequality by testing signs between potential sign-changing points. (Enter your answer using interval notation.)

$$\frac{1}{6+x} < \frac{6}{6x+x^2}$$

Illustrate your results on a labeled number line. When you are done, check your answers with a graphing utility.

Use the tools to enter your answer.



NO SOLUTION

-
-
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-]

WebAssign. NumberLine

[Help](#)

eBook

Show My Work (Optional)

27. [-/3 Points]

DETAILS

TAALMANCALCIP1 0.3.044.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the solution set of the absolute value inequality. (Enter your answer using interval notation.)

$$|3x + 1| \geq 8$$

eBook

Show My Work (Optional) ?

28. [-/3 Points]

DETAILS

TAALMANCALCIP1 0.3.050.

MY NOTES

ASK YOUR TEACHER

Find the solution set of the absolute value inequality. (Enter your answer using interval notation.)

$$|x^2 - 4| \geq 5$$

eBook

Show My Work (Optional) ?

29. [-/3 Points]

DETAILS

TAALMANCALCIP1 0.3.052.

MY NOTES

ASK YOUR TEACHER

PRACTICE ANOTHER

Find the solution set of the absolute value inequality. (Enter your answer using interval notation.)

$$|x^2 + 7x - 1| > 7$$

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Show My Work (Optional) ?

Submit Assignment

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