2.8 Hmwk - The Derivative as a Function (Homework)

INSTRUCTOR
Francis Adjei
Texas A&M University at Galveston

Past Due **Due Date:** FRI, FEB 27, 2026 11:59 PM CST

Current Score: 12 / 20 POINTS | 60.0 %

Due date has passed. No changes can be made without an approved extension request.
You may not be granted an extension if you have already viewed the answer key.

VIEW ANSWER KEY

Scoring and Assignment Information

QUESTION	1	2	3	4	5	6	7	8	9	10
POINTS	1 / 1	1 / 1	0.5 / 0.5	0.5 / 0.5	1 / 1	1 / 1	1 / 1	6 / 6	– / 7	– / 1

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

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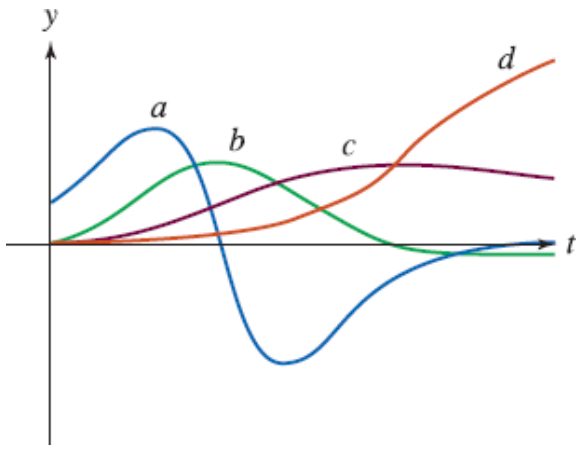
1. **[1 / 1 Points]** DETAILS MY NOTES PREVIOUS ANSWERS ASK YOUR TEACHER

SCalcET9 2.8.052.

The figure shows the graphs of four functions. One is the position function of a car, one is the velocity of the car, one is its acceleration, and one is its jerk. Identify each curve, and explain your choices.

Figure Description



position d ✓
velocity c ✓
acceleration b ✓
jerk a ✓

Resources

Read It

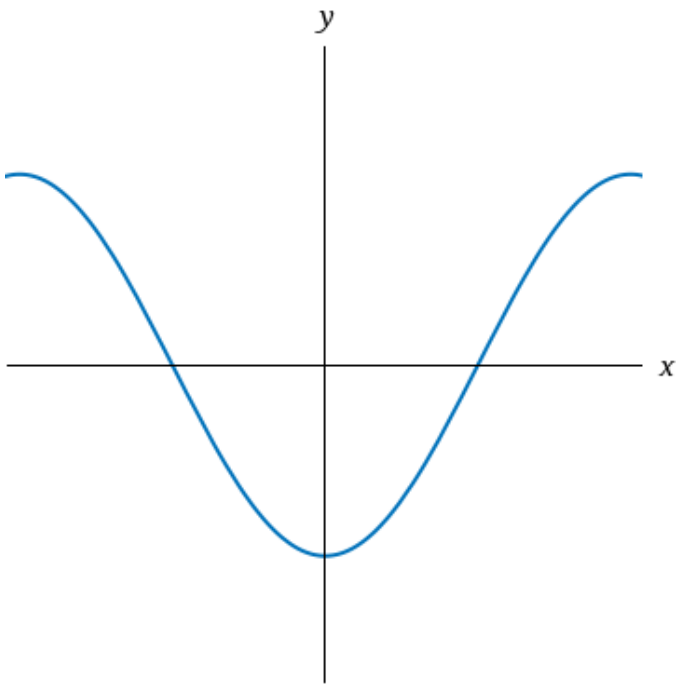
2. **[1 / 1 Points]**

DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER

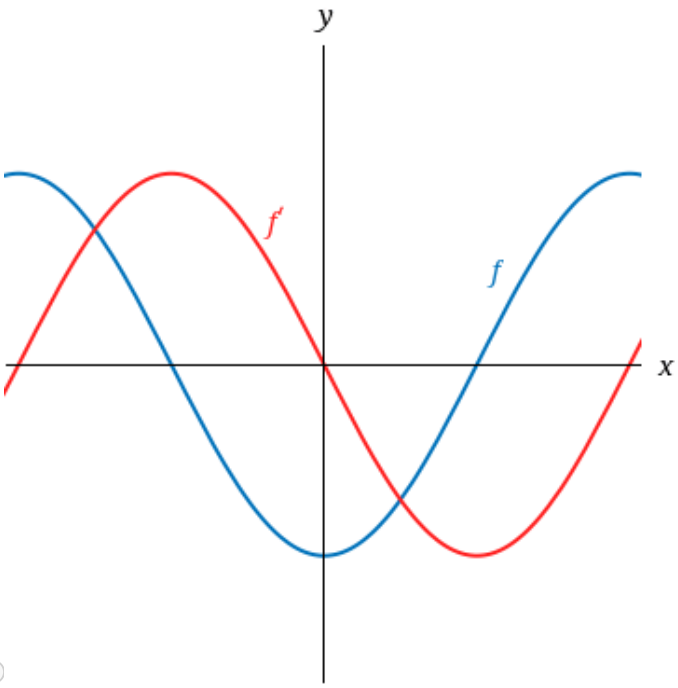
PRACTICE ANOTHER

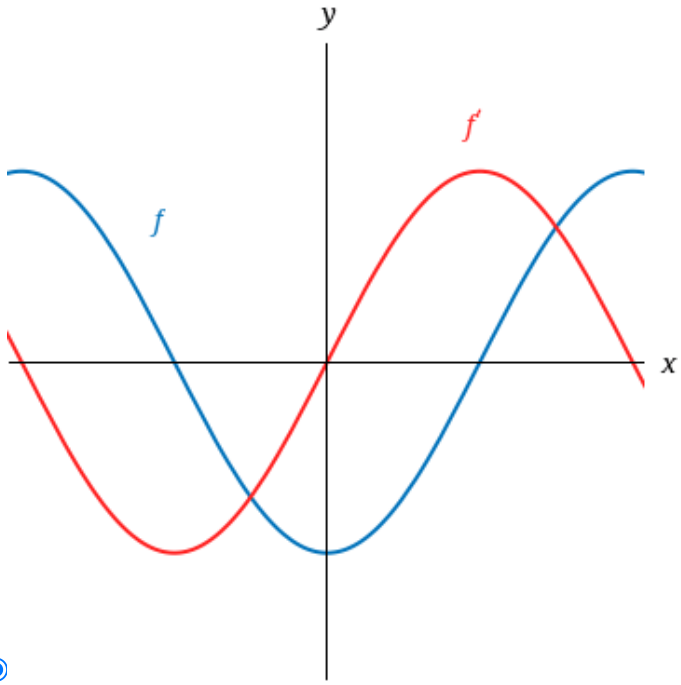
SCalcET9 2.8.004.

Trace or copy the graph of the given function *f*.



Sketch the graph of f' on the same coordinate axes.


y
f′
f
x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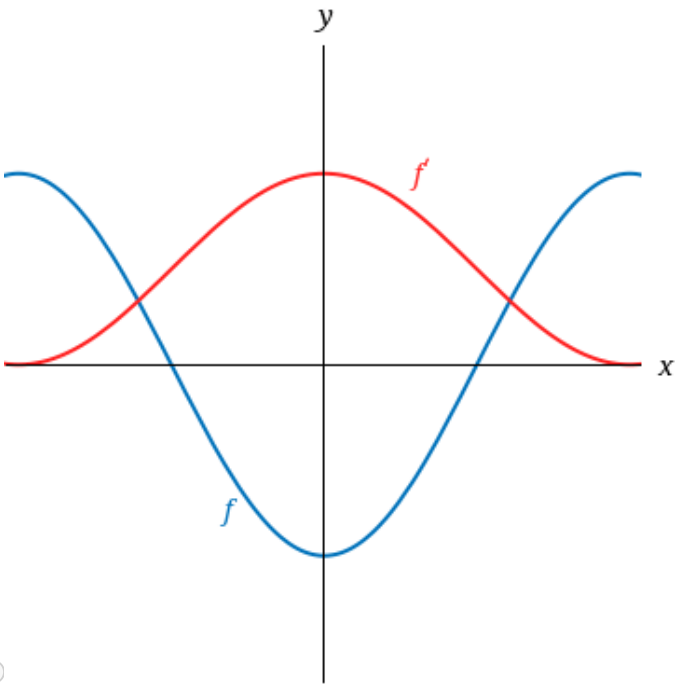
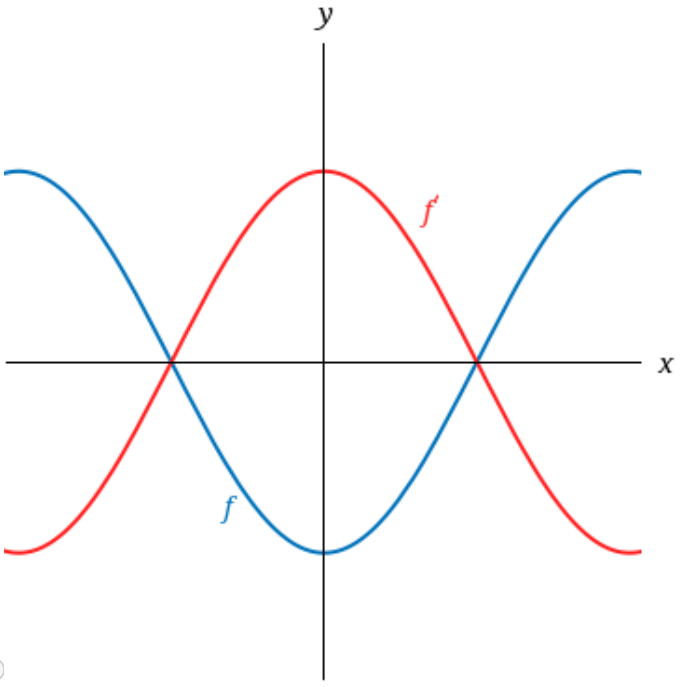




✔ Impressive work!

Resources

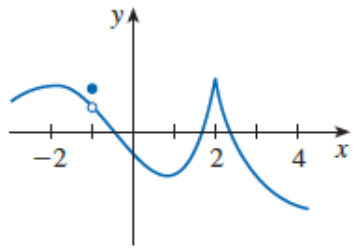
Read It

3. **[0.5 / 0.5 Points]**

DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER | PRACTICE ANOTHER

SCalcET9 2.8.042.

The graph of *f* is given. State the numbers at which *f* is not differentiable. (Enter your answers as a comma-separated list.)



x =

$$−1, 2

✔ Very nice!

Resources

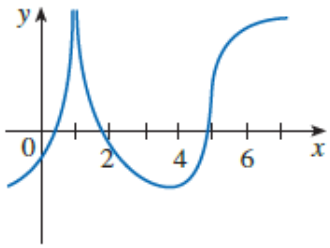
Read It

4. **[0.5 / 0.5 Points]**

DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER | PRACTICE ANOTHER

SCalcET9 2.8.043.

The graph of *f* is given. State the numbers at which *f* is not differentiable. (Enter your answers as a comma-separated list.)



x =

$$1

✔ Outstanding!

Resources

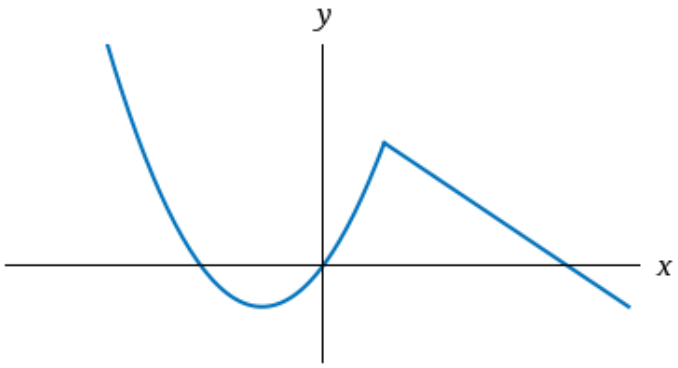
Read It Watch It

5. **[1 / 1 Points]**

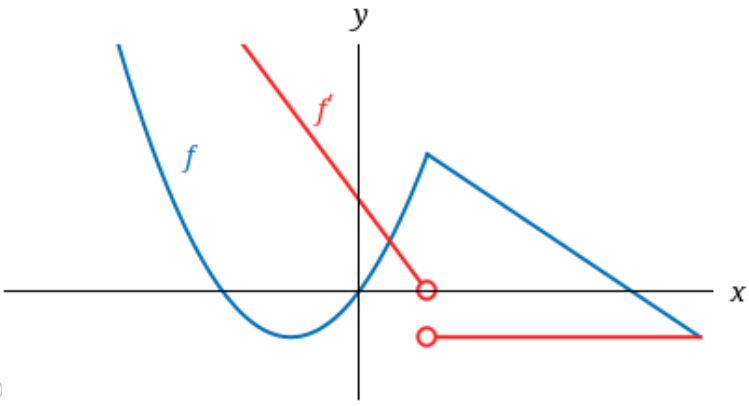
DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER | PRACTICE ANOTHER

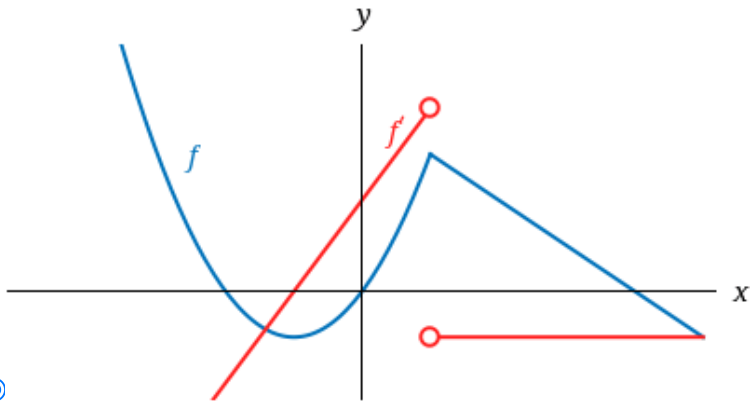
SCalcET9 2.8.009.

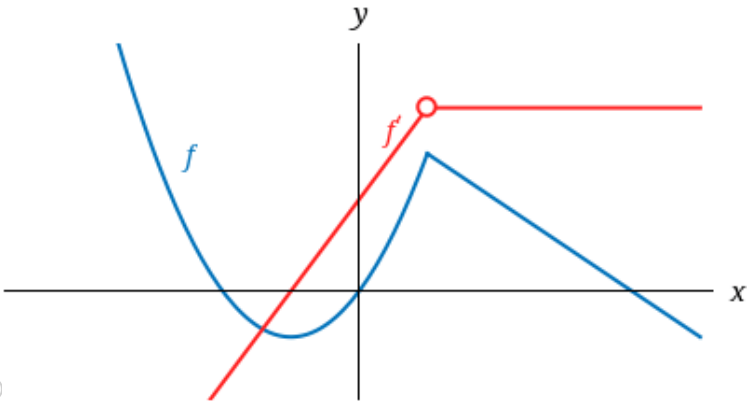
Trace or copy the graph of the given function *f*.

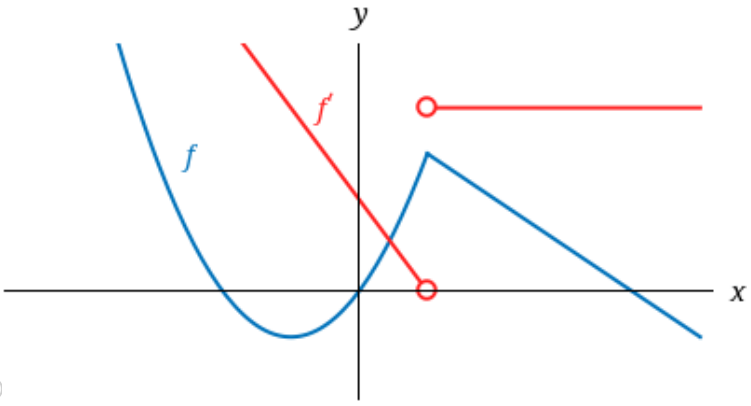


Sketch the graph of f' on the same coordinate axes.









Good work!

Resources

Read It

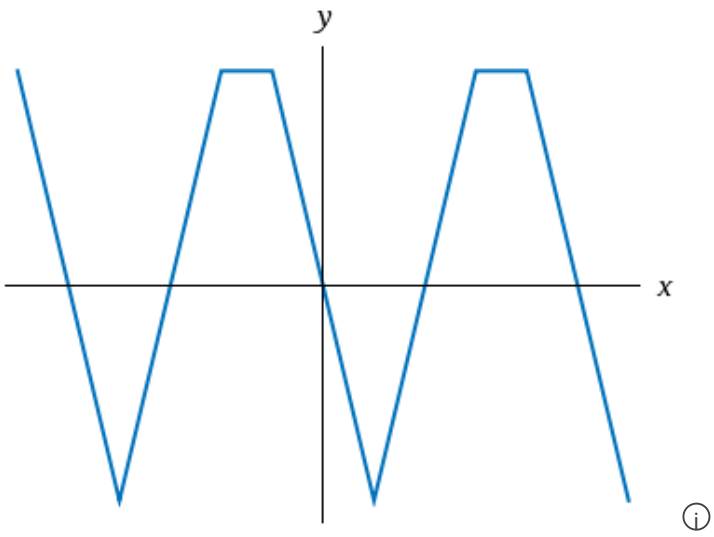
6. **[1 / 1 Points]**

DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER

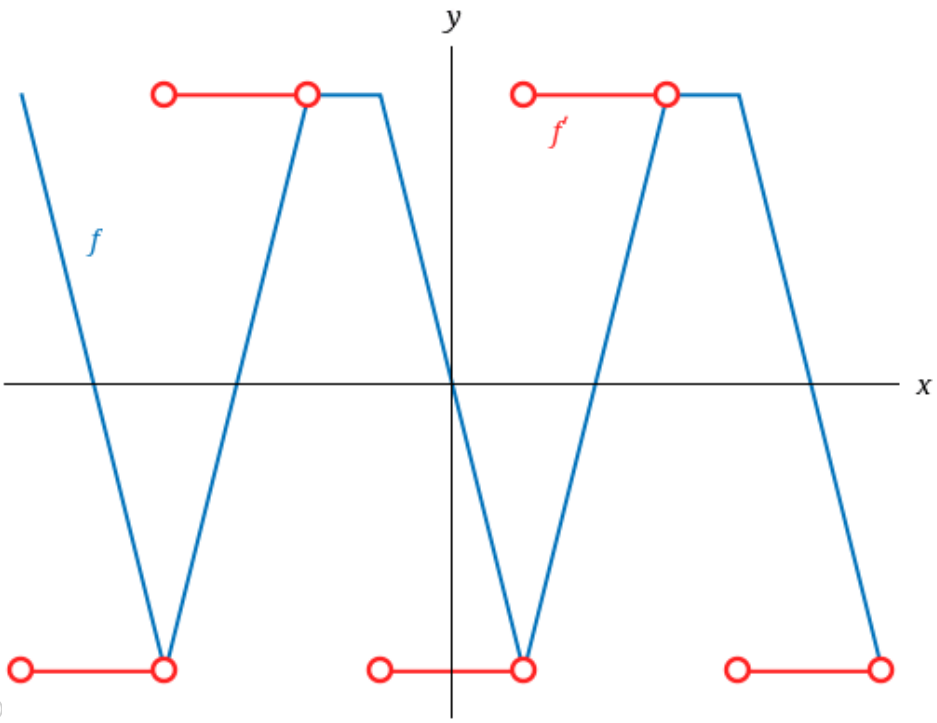
PRACTICE ANOTHER

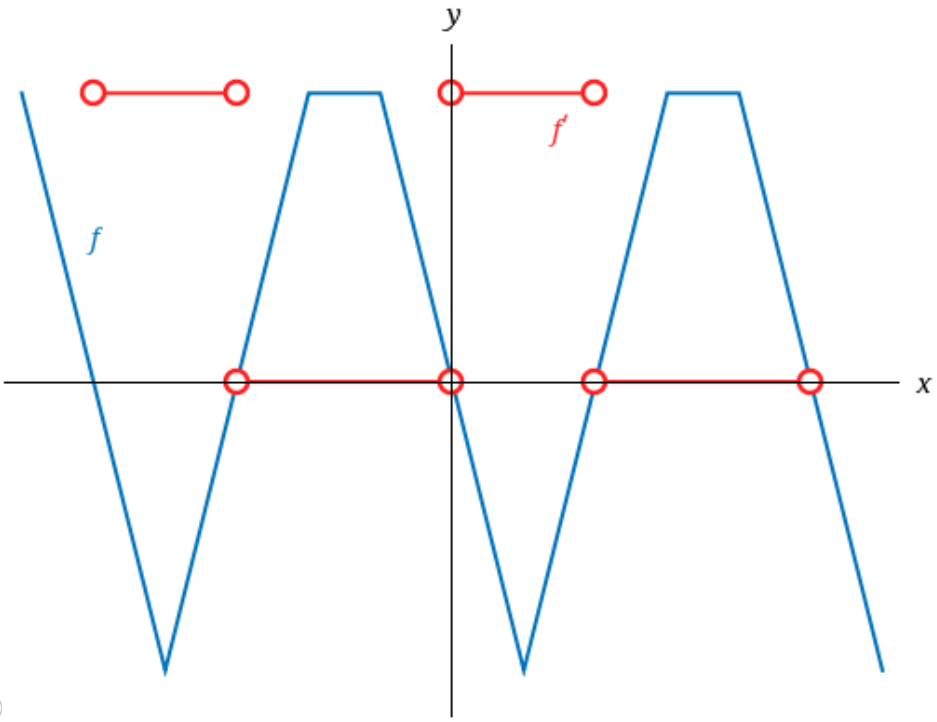
SCalcET9 2.8.010.

Trace or copy the graph of the given function *f*.



Sketch the graph of f' on the same coordinate axes.


y
x
f
f′


y
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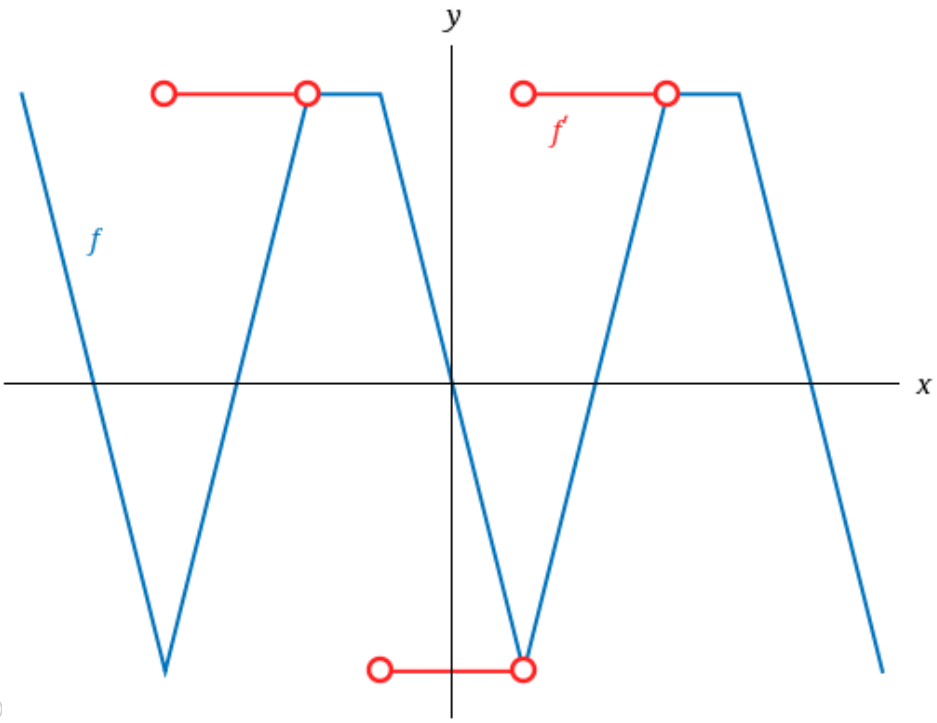
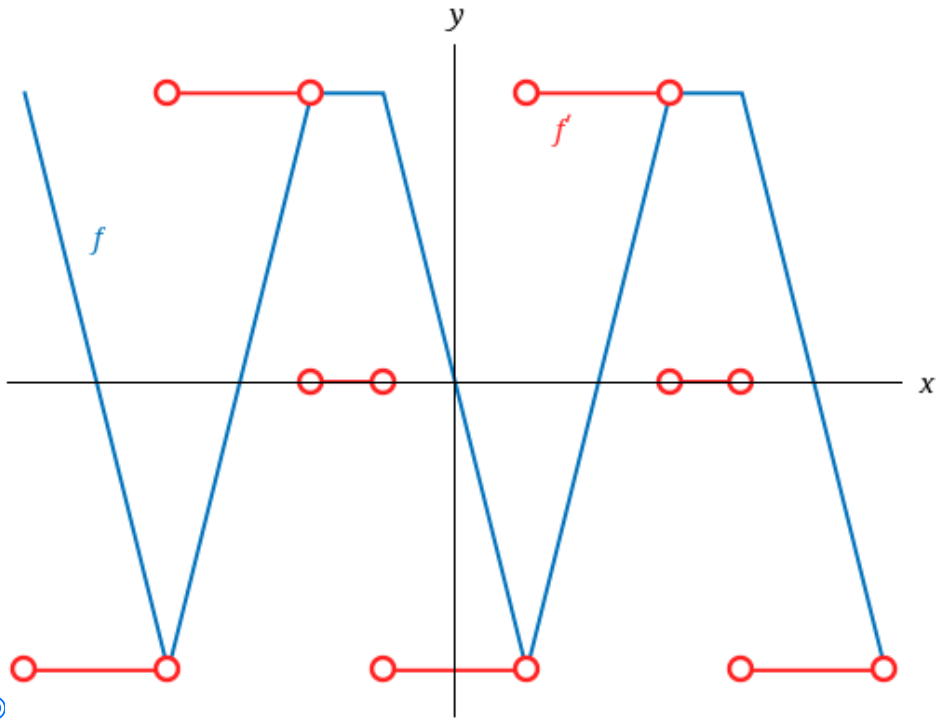




✔ You're right!

Resources

Read It

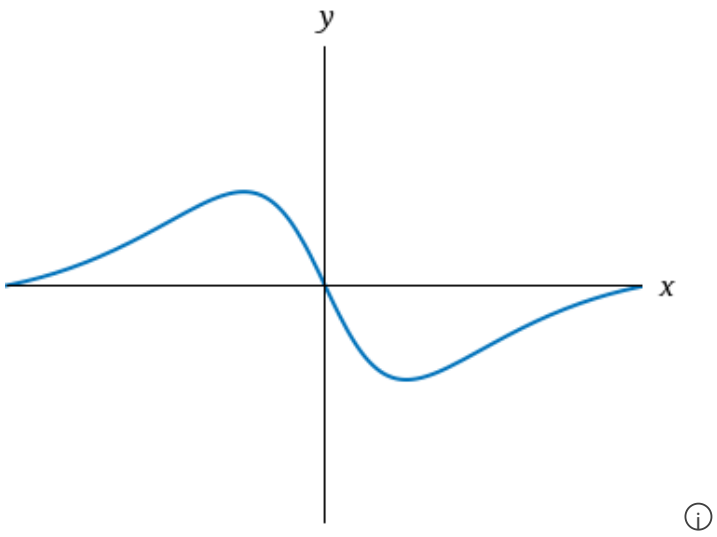
7. **[1 / 1 Points]**

DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER

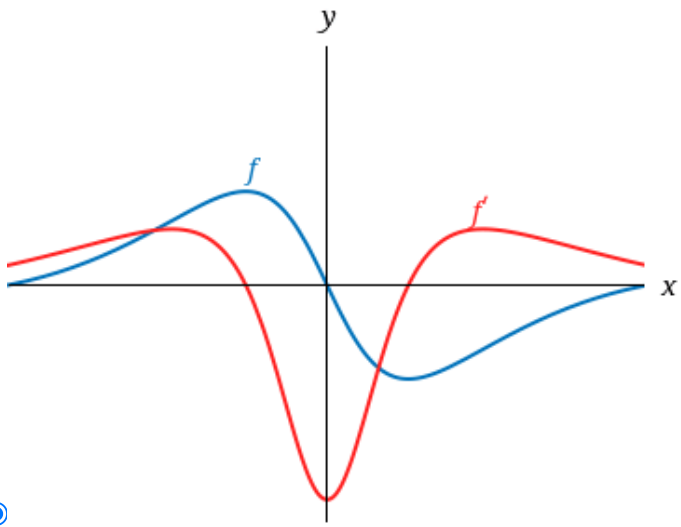
PRACTICE ANOTHER

SCalcET9 2.8.006.

Trace or copy the graph of the given function *f*.



Sketch the graph of f' on the same coordinate axes.


y
f
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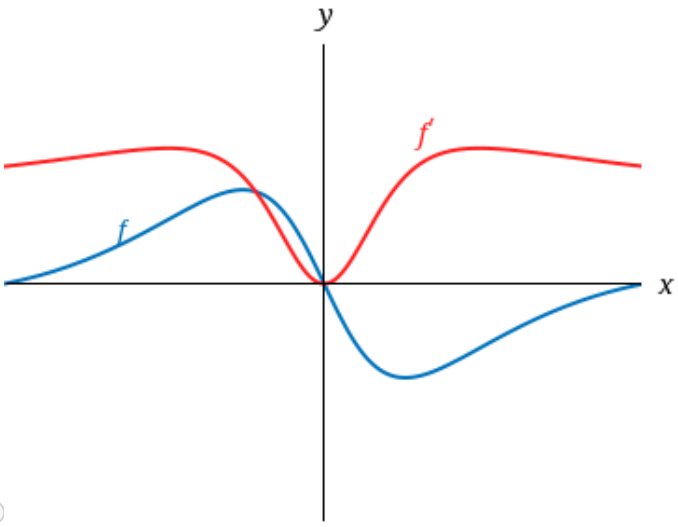
y
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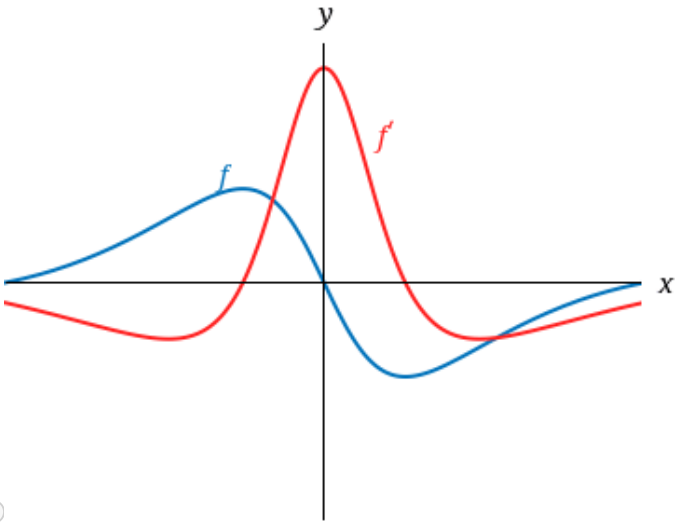
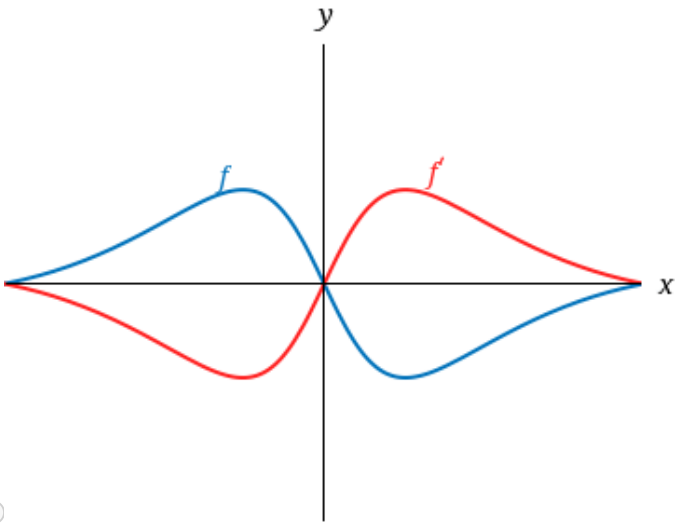




✔ You're right!

Resources

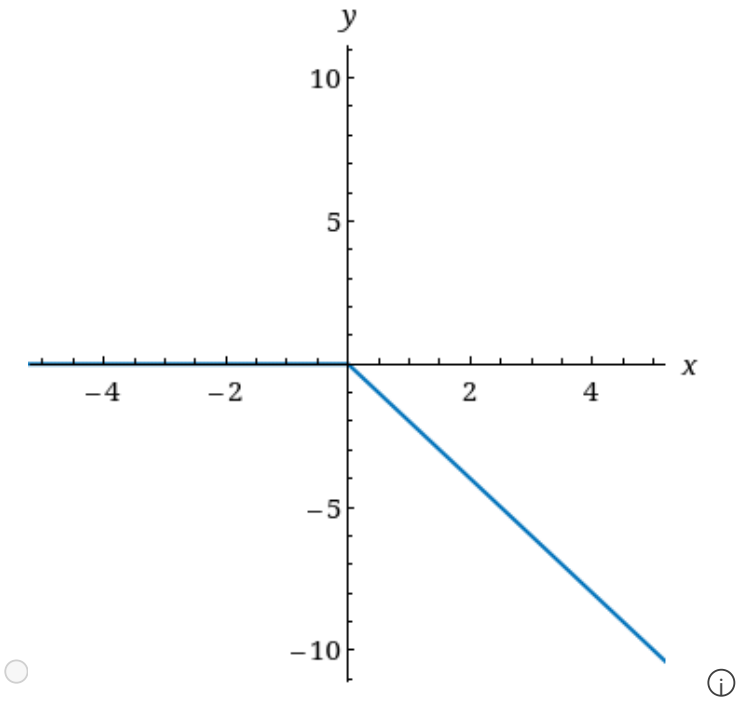
Read It

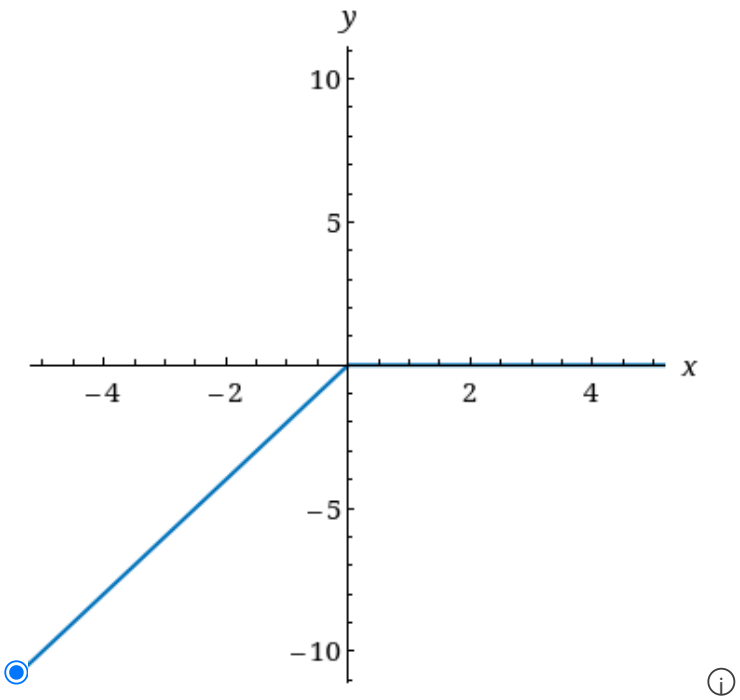
8. **[6 / 6 Points]**

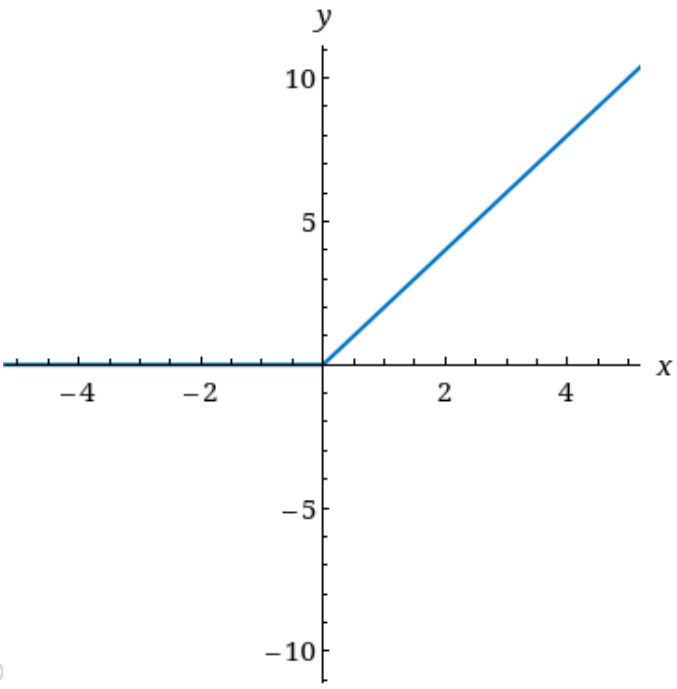
DETAILS | MY NOTES | PREVIOUS ANSWERS | ASK YOUR TEACHER | PRACTICE ANOTHER

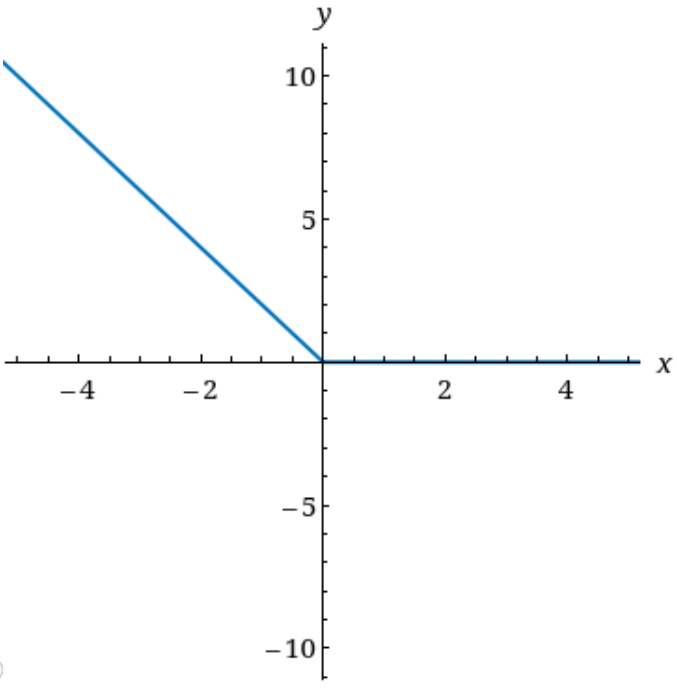
SCalcET9 2.8.062.

(a) Sketch the graph of the function $g(x) = x - |x|$.









✔ Perfect!

(b) For what values of x is g differentiable? (Enter your answer using interval notation.)

$$(−∞,0)∪(0,∞)

✔ Amazing work!

(c) Find a formula for g'.

Resources

Read It

9. **[– / 7 Points]** DETAILS MY NOTES ASK YOUR TEACHER PRACTICE ANOTHER

SCalcET9 2.8.059.

Show that the function $f(x) = |x - 2|$ is not differentiable at 2.

We have

$$f(x) = |x - 2| = \begin{cases} \boxed{\textit{(No Response)}} & \text{if } x \geq 2 \\ \boxed{\textit{(No Response)}} & \text{if } x < 2. \end{cases}$$

The right-hand limit is

$$\lim_{x \to 2^+} \frac{f(x) - f(2)}{x - 2} = \boxed{\textit{(No Response)}},$$

and the left-hand limit is

$$\lim_{x \to 2^-} \frac{f(x) - f(2)}{x - 2} = \boxed{\textit{(No Response)}}.$$

Since these limits are not equal, $f'(2) = \lim_{x \to 2} \frac{f(x) - f(2)}{x - 2}$ does not exist and f is not differentiable at 2.

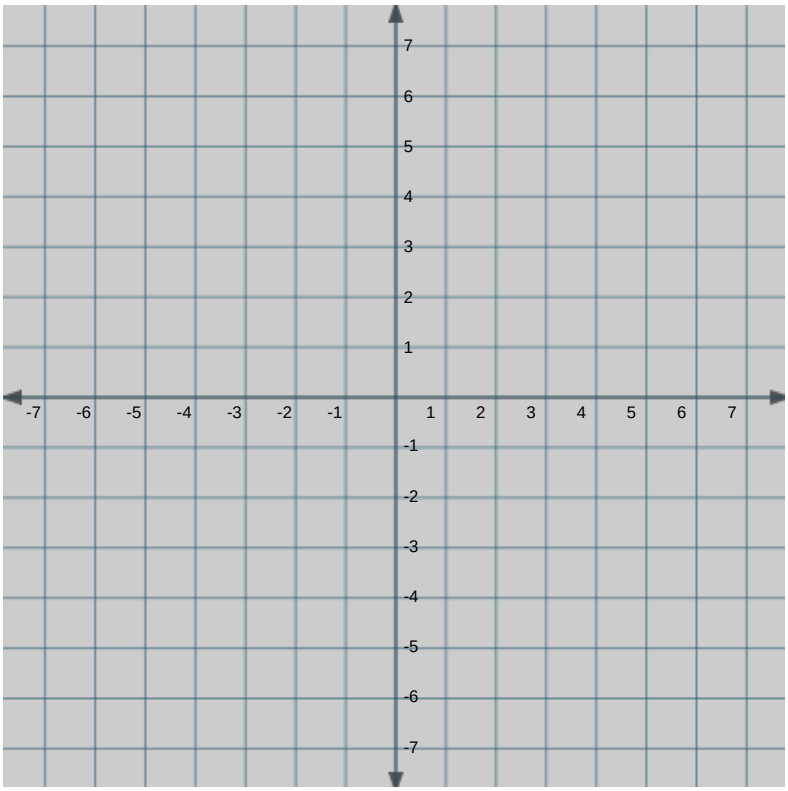
Find a formula for f' and sketch its graph.

$$f'(x) = \begin{cases} \boxed{\textit{(No Response)}} & \text{if } x > 2 \\ \boxed{\textit{(No Response)}} & \text{if } x < 2 \end{cases}$$

- ○ 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.

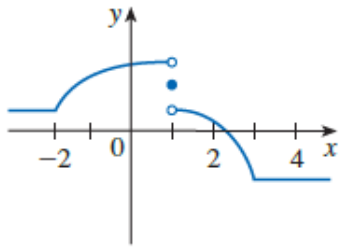
Resources

Read It Watch It

10. **[– / 1 Points]** DETAILS MY NOTES ASK YOUR TEACHER PRACTICE ANOTHER

SCalcET9 2.8.044.

The graph of *f* is given. State the numbers at which *f* is not differentiable. (Enter your answers as a comma-separated list.)



x = *(No Response)*

Resources

Read It Watch It

Home My Assignments