Due: Mon Sep 15 2014 11:59 PM EDT

Question 1 2 3 4 5 6 7 8 9 10 11 12

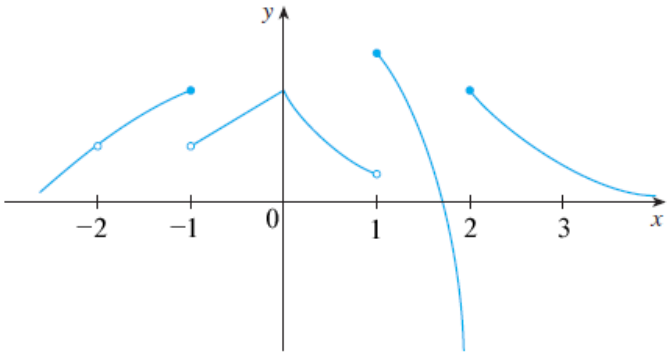
1. Question Details SCalcET6 2.5.003.MI.SA. [1569818]

This question has several parts that must be completed sequentially. If you skip a part of the question, you will not receive any points for the skipped part, and you will not be able to come back to the skipped part.

Tutorial Exercise

(a) From the graph of *f*, state the numbers at which *f* is discontinuous and explain why.

(b) For each of the numbers stated in part (a), determine whether *f* is continuous from the right, or from the left, or neither.



2. Question Details SCalcET6 2.5.037. [780409]

Find the numbers at which *f* is discontinuous and determine whether *f* is continuous from the right, or from the left, or neither.

$$f(x) = \begin{cases} 3 + x^2 & \text{if } x \le 0 \\ 6 - x & \text{if } 0 < x \le 6 \\ (x-6)^2 & \text{if } x > 6 \end{cases}$$

x = 0

- continuous from the right
- continuous from the left
- neither

3. Question Details SCalcET6 2.5.038. [780393]

Find the numbers at which f is discontinuous. Then determine whether f is continuous from the right, from the left, or neither at each point of discontinuity.

$$f(x) = \begin{cases} x+2 & \text{if } x \le 1 \\ \frac{1}{x} & \text{if } 1 < x < 6 \\ \sqrt{x-6} & \text{if } x \ge 6 \end{cases}$$

$x =$ [ ] 1 (smaller value)

- continuous from the right
- continuous from the left
- neither

$x =$ [ ] 6 (larger value)

- continuous from the right
- continuous from the left
- neither

4. Question Details SCalcET6 2.5.039. [780388]

Find the numbers at which f is discontinuous and determine whether f is continuous from the right, or from the left, or neither.

$$f(x) = \begin{cases} x+4 & \text{if } x < 0 \\ e^x & \text{if } 0 \le x \le 1 \\ 6-x & \text{if } x > 1 \end{cases}$$

$x =$ [ ] 0 (smaller value)

- continuous from the right
- continuous from the left
- neither

$x =$ [ ] 1 (larger value)

- continuous from the right
- continuous from the left
- neither

5. Question Details SCalcET6 2.5.041.MI.SA. [1569706]

This question has several parts that must be completed sequentially. If you skip a part of the question, you will not receive any points for the skipped part, and you will not be able to come back to the skipped part.

Tutorial Exercise

For what value of the constant c is the function f continuous on $(-\infty, \infty)$?

$$f(x) = \begin{cases} cx^2 + 3x & \text{if } x < 4 \\ x^3 - cx & \text{if } x \geq 4 \end{cases}$$

6. Question Details SCalcET6 2.7.003. [1287988]

Consider the parabola $y = 7x - x^2$.

(a) Find the slope of the tangent line to the parabola at the point (1, 6).

5

(b) Find an equation of the tangent line in part (a).

$y =$ $5x + 1$

7. Question Details SCalcET6 2.7.004. [1288105]

Consider the curve $y = x - x^3$.

(a) Find the slope of the tangent line to the curve at the point (1, 0).

-2

(b) Find an equation of the tangent line in part (a).

$y =$ $-2x + 2$

8. Question Details SCalcET6 2.7.006. [1288539]

Find an equation of the tangent line to the curve at the point (-1, -2).

$y = 5x^3 - 3x$

$y =$ $12x + 10$

9. Question Details SCalcET6 2.7.007.MI.SA. [1569894]

This question has several parts that must be completed sequentially. If you skip a part of the question, you will not receive any points for the skipped part, and you will not be able to come back to the skipped part.

Tutorial Exercise

Find an equation of the tangent line to the curve at the point (100, 10).

$y = \sqrt{x}$

10. Question Details SCalcET6 2.7.021. [1288310]

Consider the function below.

$f(x) = 5x^2 - 3x$

(a) Find $f'(1)$.

7

(b) Use the answer in part (a) to find an equation of the tangent line to the parabola $y = 5x^2 - 3x$ at the point (1, 2).

$y =$ $7x - 5$

11. Question Details SCalcET6 2.7.022. [1288331]

Consider the function below.

$g(x) = 1 - x^3$

(a) Find $g'(0)$.

0

(b) Use it to find an equation of the tangent line to the curve $y = 1 - x^3$ at the point (0,1).

$y =$ 1

12. Question Details SCalcET6 2.8.032. [1816583]

If $f(x) = x^2 - \sqrt{x} + 2$, find $f'(x)$.

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

Assignment Details

Name (AID): **MATH 141 HW 04 (6317047)**
Submissions Allowed: **100**
Category: **Homework**
Code:
Locked: **Yes**
Author: **Blanco-Silva, Francisco** (blanco@math.sc.edu)
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