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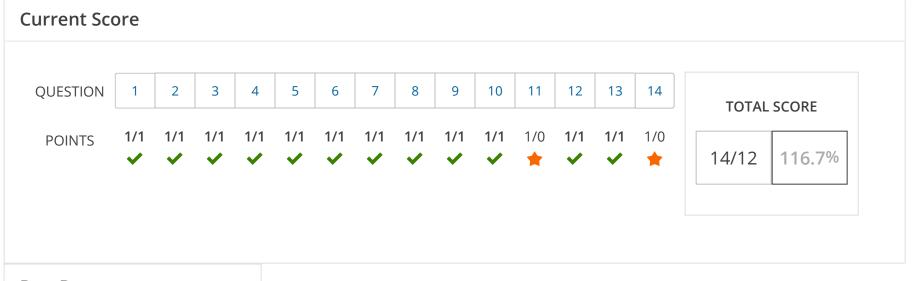
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5.3 Teorema Fundamental del Cá Iculo (Homework)





Due Date

DECEMBER 21 11:59 PM CST

1.



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.

1/1 points Previous Answers SCalcET8 5.3.007.

My Notes

Ask Your Teacher

Use Part 1 of the Fundamental Theorem of Calculus to find the derivative of the function.

$$g(x) = \int_0^x \sqrt{t^4 + t^6} dt$$

$$g'(x) = \sqrt{x^4 + x^6 \cdot 1}$$

2. 1/1 points Previous Answers SCalcET8 5.3.011.

- My Notes
- **Ask Your Teacher**

Use Part 1 of the Fundamental Theorem of Calculus to find the derivative of the function.

$$F(x) = \int_{x}^{0} \sqrt{2 + \sec(8t)} \ dt \quad \left[Hint: \int_{x}^{0} \sqrt{2 + \sec(8t)} \ dt = -\int_{0}^{x} \sqrt{2 + \sec(8t)} \ dt \right]$$

$$F'(x) =$$





3. 1/1 points Previous Answers SCalcET8 5.3.013.

- My Notes
- **Ask Your Teacher**

Use Part 1 of the Fundamental Theorem of Calculus to find the derivative of the function.

$$h(x) = \int_{1}^{e^{X}} 5 \ln(t) dt$$

$$h'(x) = \int_{1}^{5} \ln(t) dt$$

$$h'(x) = \int_{1}^{5} \sin(t) dt$$

4. 1/1 points Previous Answers SCalcET8 5.3.061.

My Notes

Ask Your Teacher

Find the derivative of the function.

$$F(x) = \int_{x}^{x^{2}} e^{t^{4}} dt$$

$$F'(x) = e^{x \cdot 2x - e^{x^{4}} \cdot 1}$$

1/1 points Previous Answers SCalcET8 5.3.063.

My Notes

Ask Your Teacher

Find the derivative of the function.

$$y = \int_{\cos(x)}^{\sin(x)} \ln(1 + 7v) \, dv$$

$$y'(x) = \frac{\ln(1 + 7sin(x))\cos(x) + \ln(1 + 7cos(x)) \cdot \sin(x)}{\ln(1 + 7sin(x))\cos(x) + \ln(1 + 7cos(x)) \cdot \sin(x)}$$

Need Help?

Watch It

Talk to a Tutor

6. 1/1 points Previous Answers SCalcET8 5.3.505.XP.

- My Notes
- **Ask Your Teacher**

Use Part 1 of the Fundamental Theorem of Calculus to find the derivative of the function.

$$y = \int_{9}^{\tan(x)} \sqrt{\frac{2t + \sqrt{t}}{t}} dt$$



$$\sqrt{2(tan(x))} + \sqrt{tan(x)} \cdot sec2(x)$$



 \checkmark

7. 1/1 points Previous Answers SCalcET8 5.3.019.

- My Notes
- **Ask Your Teacher**

Evaluate the integral.

$$\int_{4}^{6} (x^2 + 2x - 7) \ dx$$

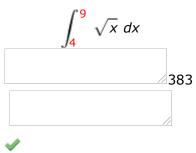




8. 1/1 points Previous Answers SCalcET8 5.3.023.

- My Notes
- **Ask Your Teacher**

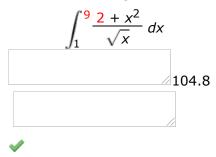
Evaluate the integral.



9. 1/1 points Previous Answers SCalcET8 5.3.029.

- My Notes
- **Ask Your Teacher**

Evaluate the integral.

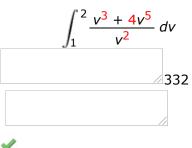


11.

1/1 points Previous Answers SCalcET8 5.3.035. 10.

- My Notes
- **Ask Your Teacher**

Evaluate the integral.

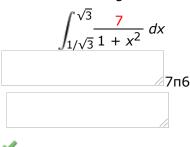


1/0 points Previous Answers

SCalcET8 5.3.039.

- My Notes
- **Ask Your Teacher**

Evaluate the integral.



1/1 points Previous Answers SCalcET8 5.3.044. 12.

- My Notes
- **Ask Your Teacher**

Evaluate the integral.

$$\int_{-4}^{4} f(x) \ dx \text{ where } f(x) = \begin{cases} 3 & \text{if } -4 \le x \le 0 \\ 6 - x^2 & \text{if } 0 < x \le 4 \end{cases}$$

1/1 points Previous Answers SCalcET8 5.3.055. 13.

My Notes

Ask Your Teacher

What is wrong with the equation?

$$\int_{-2}^{4} x^{-3} dx = \frac{x^{-2}}{-2} \bigg|_{-2}^{4} = \frac{3}{32}$$

- $f(x) = x^{-3}$ is not continuous on the interval [-2, 4] so <u>FTC2</u> cannot be applied.
- $f(x) = x^{-3}$ is not continuous at x = -2, so <u>FTC2</u> cannot be applied.
- There is nothing wrong with the equation.
- The lower limit is less than 0, so <u>FTC2</u> cannot be applied.
- $f(x) = x^{-3}$ is continuous on the interval [-2, 4] so <u>FTC2</u> cannot be applied.





1/0 points Previous Answers SCalcET8 5.3.059.

My Notes

Ask Your Teacher

Find the derivative of the function.

$$g(x) = \int_{4x}^{7x} \frac{u^2 - 3}{u^2 + 3} du \qquad \left[Hint: \int_{4x}^{7x} f(u) du = \int_{4x}^{0} f(u) du + \int_{0}^{7x} f(u) du \right]$$

$$g'(x) =$$



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