

Due: Fri, May 31, 2019 12:00 AM MST

Question

1234567891011121314151617181920212223242526272829303132333435



1. Question Details

SCalcET8 7.1.003.MI.SA. [3860465]

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

Evaluate the integral.

$$\int 8x \cos(3x) \, dx$$

2. Question Details

SCalcET8 7.1.001. [3805533]

Evaluate the integral using integration by parts with the indicated choices of u and dv . (Use C for the constant of integration.)

$$\int x e^{4x} \, dx; \quad u = x, \quad dv = e^{4x} \, dx$$

3. Question Details

SCalcET8 7.1.003.MI. [3805119]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 7x \cos(4x) \, dx$$

4. Question Details

SCalcET8 7.1.010. [3805777]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \ln(\sqrt{x}) \, dx$$

5. Question Details

SCalcET8 7.1.019. [3805691]

Evaluate the integral. (Use C for the constant of integration.)

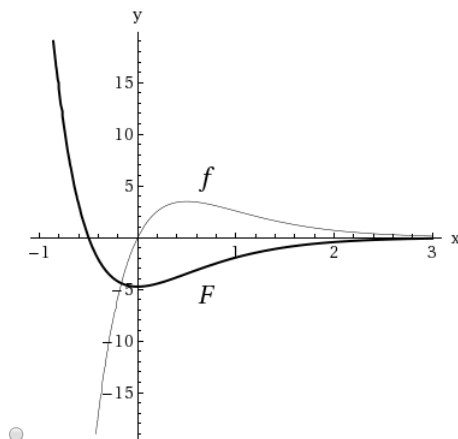
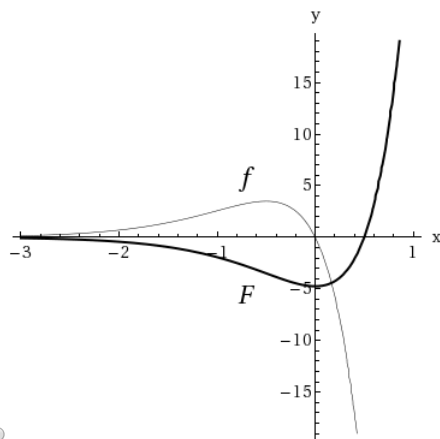
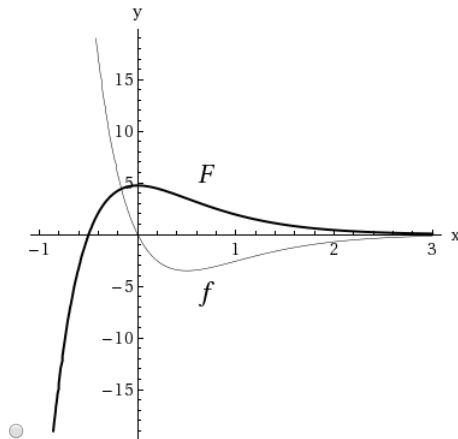
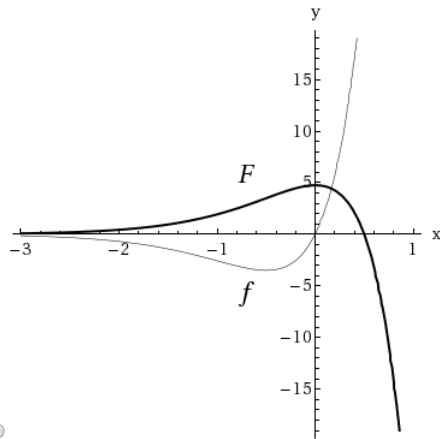
$$\int 21z^3 e^z \, dz$$

6. Question Details

SCalcET8 7.1.043. [3805227]

Evaluate the indefinite integral. (Use C for the constant of integration.)

$$\int 19xe^{-2x} dx$$

Illustrate, and check that your answer is reasonable, by graphing both the function f and its antiderivative F (take $C = 0$).

7. Question Details

SCalcET8 7.1.024. [3805639]

Evaluate the integral.

$$\int_0^1 (x^2 + 6)e^{-x} dx$$

8. Question Details

SCalcET8 7.2.001.MI.SA. [3805264]

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

Evaluate the integral.

$$\int 19 \sin^2(x) \cos^3(x) dx$$

9. Question Details

SCalcET8 7.2.001.MI. [3805244]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 7 \sin^2(x) \cos^3(x) dx$$

10. Question Details

SCalcET8 7.2.002. [3804660]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \sin^3(\theta) \cos^4(\theta) d\theta$$

11. Question Details

SCalcET8 7.2.007. [3805620]

Evaluate the integral.

$$\int_0^{\pi/2} 9 \cos^2(\theta) d\theta$$

12. Question Details

SCalcET8 7.2.011. [3805206]

Evaluate the integral.

$$\int_0^{\pi/2} 5 \sin^2(x) \cos^2(x) dx$$

13. Question Details

SCalcET8 7.2.016. [3805568]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \tan^6(x) \cos^7(x) dx$$

14. Question Details

SCalcET8 7.2.021. [3805242]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 8 \tan(x) \sec^3(x) dx$$

15. Question Details

SCalcET8 7.2.023. [3805150]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 7 \tan^2(x) dx$$

16. Question Details

SCalcET8 7.2.025. [3805473]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 16 \tan^4(x) \sec^6(x) dx$$

17. Question Details

SCalcET8 7.2.056. [3804852]

Evaluate $\int \sin(x) \cos(x) dx$ by four methods.(a) the substitution $u = \cos(x)$

- ☐ $-\frac{5}{2} \sin^2(x) + C$
☐ $\frac{5}{4} \sin(x) \cos(x) + C$
☐ $\frac{5}{4} \cos(2x) + C$
☐ $-\frac{5}{2} \cos^2(x) + C$
☒ $\frac{5}{4} \sin(2x) + C$

(b) the substitution $u = \sin(x)$

- ☐ $\frac{5}{2} \sin^2(x) + C$
☐ $\frac{5}{4} \cos(2x) + C$
☐ $\frac{5}{4} \sin(x) \cos(x) + C$
☐ $-\frac{5}{4} \sin(2x) + C$
☐ $\frac{5}{2} \cos^2(x) + C$

(c) the identity $\sin(2x) = 2 \sin(x) \cos(x)$

- ☐ $-\frac{5}{2} \sin^2(x) + C$
☐ $-\frac{5}{4} \cos(2x) + C$
☐ $\frac{5}{2} \cos^2(x) + C$
☐ $-\frac{5}{4} \sin(x) \cos(x) + C$
☐ $\frac{5}{4} \sin(2x) + C$

(d) integration by parts

- ☐ $-\frac{5}{4} \sin(2x) + C$
☐ $\frac{5}{2} \sin^2(x) + C$
☐ $\frac{5}{2} \cos^2(x) + C$
☐ $\frac{5}{4} \cos(2x) + C$
☐ $-\frac{5}{4} \sin(x) \cos(x) + C$

18. Question Details

SCalcET8 7.2.057. [3804857]

Find the area of the region bounded by the given curves.

$$y = \sin^2(x), \quad y = \sin^3(x), \quad 0 \leq x \leq \pi$$

19. Question Details

SCalcET8 7.2.061. [3805382]

Find the volume V obtained by rotating the region bounded by the curves about the given axis.

$$y = 7 \sin(x), \quad y = 0, \quad \pi/2 \leq x \leq \pi; \quad \text{about the } x\text{-axis}$$

 $V =$

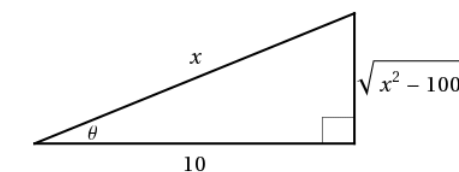
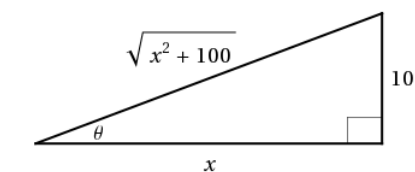
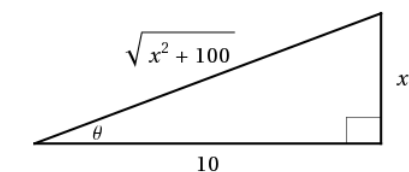
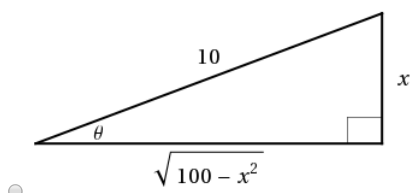
20. Question Details

SCalcET8 7.3.002. [3805202]

Evaluate the integral using the indicated trigonometric substitution. (Use C for the constant of integration.)

$$\int \frac{x^3}{\sqrt{x^2 + 100}} dx, \quad x = 10 \tan(\theta)$$

Sketch and label the associated right triangle.



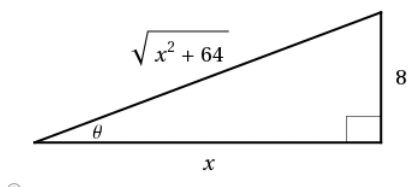
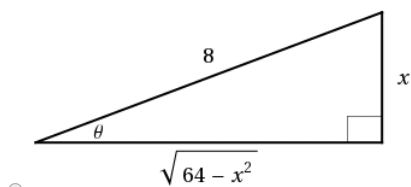
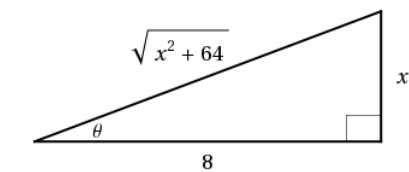
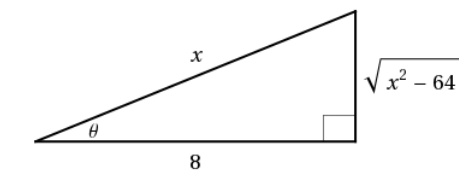
21. Question Details

SCalcET8 7.3.003. [3805544]

Evaluate the integral using the indicated trigonometric substitution. (Use C for the constant of integration.)

$$\int \frac{\sqrt{x^2 - 64}}{x} dx, \quad x = 8 \sec(\theta)$$

Sketch and label the associated right triangle.



22. Question Details

SCalcET8 7.3.004. [3804831]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \frac{x^2}{\sqrt{81 - x^2}} dx$$

23. Question Details

SCalcET8 7.3.017. [3804683]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \frac{x}{\sqrt{x^2 - 2}} dx$$

24. Question Details

SCalcET8 7.3.021. [3804963]

Evaluate the integral.

$$\int_0^{0.6} \frac{x^2}{\sqrt{9 - 25x^2}} dx$$

25. Question Details

SCalcET8 7.3.033. [3805507]

Find the average value of $f(x) = \frac{\sqrt{x^2 - 1}}{x}$, $1 \leq x \leq 7$.

26. Question Details

SCalcET8 7.3.502.XP.MI.SA. [3804917]

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[Tutorial Exercise](#)

Evaluate the integral.

$$\int_{\sqrt{2}}^2 \frac{1}{t^3 \sqrt{t^2 - 1}} dt$$

27. Question Details

SCalcET8 7.4.008. [3805457]

Evaluate the integral. (Remember to use absolute values where appropriate. Use C for the constant of integration.)

$$\int \frac{9t - 4}{t + 1} dt$$

28. Question Details

SCalcET8 7.4.009. [3805472]

Evaluate the integral. (Remember to use absolute values where appropriate. Use C for the constant of integration.)

$$\int \frac{82x + 8}{(9x + 1)(x - 1)} dx$$

29. Question Details

SCalcET8 7.4.011. [3805207]

Evaluate the integral.

$$\int_0^1 \frac{2}{2x^2 + 3x + 1} dx$$

30. Question Details

SCalcET8 7.4.013. [3804670]

Evaluate the integral. (Remember to use absolute values where appropriate. Use C for the constant of integration.)

$$\int \frac{ax}{x^2 - px} dx$$

31. Question Details

SCalcET8 7.4.023.MI.SA. [3805048]

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

Evaluate the integral.

$$\int \frac{37}{(x-1)(x^2+36)} dx$$

32. Question Details

SCalcET8 7.4.023.MI. [3805057]

Evaluate the integral. (Remember to use absolute values where appropriate. Use C for the constant of integration.)

$$\int \frac{17}{(x-1)(x^2+16)} dx$$

33. Question Details

SCalcET8 7.4.066. [3805387]

Find the volume of the resulting solid if the region under the curve $y = 10/(x^2 + 5x + 6)$ from $x = 0$ to $x = 1$ is rotated about the x -axis and the y -axis.(a) the x -axis(b) the y -axis

34. Question Details

SCalcET8 7.7.044. [3805414]

Use the Trapezoidal Rule with $n = 10$ to approximate

$$\int_0^{20} 5 \cos(2\pi x) dx.$$

Compare your result to the actual value.

Trapezoidal Rule

actual value

Can you explain the discrepancy?

- ☐ The trapezoidal rule samples only function values that are positive.
- ☐ The trapezoidal rule samples only function values that are zero.
- ☐ The trapezoidal rule samples only function values that are negative.
- ☐ Both values are equivalent.

35. Question Details

SCalcET8 7.7.003.MI.SA. [3805524]

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.

Estimate $\int_0^1 8 \cos(x^2) dx$ using the following rule with $n = 4$.

Exercise (a)

the Trapezoidal Rule

Exercise (b)

the Midpoint Rule

36. Question Details

SCalcET8 7.8.005. [3805388]

Determine whether the integral is convergent or divergent.

$$\int_7^{\infty} \frac{1}{(x-6)^{3/2}} dx$$

- ☐ convergent
- ☐ divergent

If it is convergent, evaluate it. (If the quantity diverges, enter DIVERGES.)

37. Question Details

SCalcET8 7.8.009. [3804729]

Determine whether the integral is convergent or divergent.

$$\int_2^{\infty} e^{-8p} dp$$

- ☐ convergent
- ☐ divergent

If it is convergent, evaluate it. (If the quantity diverges, enter DIVERGES.)

38. Question Details

SCalcET8 7.8.013. [3805229]

Determine whether the integral is convergent or divergent.

$$\int_{-\infty}^{\infty} 7xe^{-x^2} dx$$

- ☐ convergent
- ☐ divergent

If it is convergent, evaluate it. (If the quantity diverges, enter DIVERGES.)

39. Question Details

SCalcET8 7.8.015. [3804631]

Determine whether the integral is convergent or divergent.

$$\int_0^{\infty} 6 \sin^2(\alpha) d\alpha$$

- ☐ convergent
- ☐ divergent

If it is convergent, evaluate it. (If the quantity diverges, enter DIVERGES.)

40. Question Details

SCalcET8 7.5.013. [3805728]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \sin^5(t) \cos^6(t) dt$$

41. Question Details

SCalcET8 7.5.020. [3805006]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 2e^3 dx$$

42. Question Details

SCalcET8 7.5.037. [3805778]

Evaluate the integral.

$$\int_0^{\pi/4} \tan^4(\theta) \sec^2(\theta) d\theta$$

43. Question Details

SCalcET8 7.5.074. [3805351]

Evaluate the integral. (Use C for the constant of integration.)

$$\int \frac{9^x + 15^x}{3^x} dx$$

44. Question Details

SCalcET8 7.5.504.XP. [3804813]

Evaluate the integral.

$$\int_{-3}^6 \frac{x-5}{x^2-3x-28} dx$$

45. Question Details

SCalcET8 7.5.509.XP. [3804679]

Evaluate the integral. (Remember to use absolute values where appropriate. Use C for the constant of integration.)

$$\int \frac{3x^2-2}{x^2-4x-60} dx$$

46. Question Details

SCalcET8 7.5.514.XP. [3805666]

Evaluate the integral. (Remember to use absolute values where appropriate. Use C for the constant of integration.)

$$\int \frac{1}{(x-8)(x^2+9)} dx$$

47. Question Details

SCalcET8 7.5.530.XP. [3804628]

Evaluate the integral. (Use C for the constant of integration.)

$$\int 17 \sin^3(\theta) \cos^5(\theta) d\theta$$

Assignment Details

Name (AID): **Chap 7 HW -- Integration Techniques (11708642)**Submissions Allowed: **15**Category: **Homework**

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