MFalk_137

professor

WeBWorK assignment number Exercises_3

This is an exercise assignment, treated differently from ordinary WeBWork assignments. The WeBWork due date is the same as the opening date, so that answers are available to students immediately. Students are to print the assignment and work the problems on paper. That work will be collected periodically and graded for effort. Exercises are worth 20 points (4% of the overall grade).

1. (1 pt) Library/maCalcDB/setIntegrals15ByParts/sc5_6_15.pg Evaluate the definite integral.

$$\int_0^5 t e^{-t} dt$$

Correct Answers:

• 0.959572318005487

2. (1 pt) Library/maCalcDB/setIntegrals15ByParts/sc5_6_2.pg Use integration by parts to evaluate the integral.

$$\int 5x\sin(x)dx$$

Correct Answers:

3. (1 pt) Library/maCalcDB/setIntegrals15ByParts/sc5_6_4.pg Use integration by parts to evaluate the integral.

$$\int 5x \ln(5x) \, dx$$

Correct Answers:

• 5 * 1/2 * (x² * ln(5 * x) - 1/2 * x²)

_____+*C*

4. (1 pt) Library/maCalcDB/setIntegrals15ByParts/sc5_6_41.pg A particle that moves along a straight line has velocity

$$v(t) = t^2 e^{-3t}$$

meters per second after t seconds. How many meters will it travel during the first t seconds?

Correct Answers:

• - e**(- 3 * t)*(t**2/3 + 2*t/9 + 2/27)+2/27

5. (1 pt) Library/ma123DB/set2/s7_1_1.pg Use integration by parts to evaluate the definite integral.

$$\int_{1} 9t^2 \ln(t) dt$$

re

Answer: _____

Correct Answers:

• 9*2/9*e^3 + 9/9

6. (1 pt) Library/ma123DB/set2/s7_1_11.pg Evaluate the indefinite integral.

$$\int e^{4x} \sin(6x) dx$$

Answer: ______+*C*

Correct Answers: • 4/52 * (e^(4*x) * sin(6*x) - 6/4 * e^(4*x) * cos(6*x))

-+C

7. (1 pt) Library/maCalcDB/setIntegrals15ByParts/osu_in_15_4.pg

$$2y\tan^{-1}(5y)\,dy =$$

Use arctan() to denote tan⁻¹() in your answer. Correct Answers:

• y²*arctan(5*y)-y/5+arctan(5*y)/5²

8. (1 pt) Library/ma123DB/set2/s7_1_18.pg Use integration by parts to evaluate the definite integral.

$$\int_{1}^{7} \sqrt{t} \ln t dt$$

Answer: ______ Correct Answers:

- 2/3 * 7^(3/2) * ln(7) 4/9 * (7^(3/2) 1)
- **9.** (1 pt) Library/ma123DB/set2/s7_1_19.pg Evaluate the definite integral.

$$\int_{4}^{8} \ln x^{54} dx$$

Answer: ____

1

Correct Answers:

- 54*(8*ln(8)-8 -(4*ln(4)-4))
- **10.** (1 pt) Library/ma123DB/set2/s7_1_2.pg Use integration by parts to evaluate the indefinite integral.

$$\int x \sec^2(5x) dx$$

Answer: ______ + *C*

Correct Answers:

• x*tan(5*x)/5-ln(abs(sec(5*x)))/5^2

11. (1 pt) Library/ma123DB/set2/s7_1_23.pg Evaluate the definite integral.

$$\int_{0.1}^{0.9} \cos x \ln(3\sin x) dx$$

Answer: _____

Correct Answers:

- sin(0.9)*ln(3*sin(0.9))-sin(0.9)-(sin(0.1)*ln(3*sin(0.c))
 - exp(a*x)*(b*sin(b*x)+a*cos(b*x))/(a*a+b*b)

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12. (1 pt) Library/ma123DB/set2/s7_1_31.pg

First make a substitution and then use integration by parts to evaluate the integral.

$$\int x^9 \cos(x^5) dx$$

Answer: ______ Correct Answers:

• 1/5 * x^5 * sin(x^5) + 1/5 * cos(x^5)

_____+ *C*

13. (1 pt) Library/ma123DB/set2/s7.1_9.pg Use integration by parts to evaluate the integral.

$$\int (\ln(5x))^2 dx$$

Answer: _____

Correct Answers:

• x*(ln(5*x))^2 - 2*x*ln(5 *x) + 2*x

 $14. \ (1\ pt)\ Library/Utah/AP_Calculus_I/set9_Basic_Methods_of_Integration/q1.pg$

----+C

Evaluate the integral below. Your answer will of course involve a and b (and x. Don't worry about the integration constant.

 $\int e^{ax} \cos bx dx = \underline{\qquad}$