← MAT2601_ONL8FA_ONL8F_21 - Calculus, Fall 2021

Week 7 Homework MAT2601 (Homework)

INSTRUCTOR
Erin Cawley
SOUTH COLLEGE

Current Score

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13
POINTS	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.66	–/6.6

TOTAL SCORE

–/100	0.0%

Due Date

TUE, NOV 16, 2021
11:59 PM EST

Request Extension

Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by questions. You are required to use a new randomization after every 3 question submissions.

Assignment Scoring

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

1. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.1.001.** 0/15 Submissions Used

MY NOTES | ASK YOUR TEACHER

If $f'(x) = 8x^7$, what is $f(x)$? (Use C for the constant of integration.)

$f(x) =$

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2. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.1.011.** 0/15 Submissions Used

MY NOTES | ASK YOUR TEACHER

Evaluate the integral. Check your answer by differentiating. (Use C for the constant of integration.)

$$\int \left(2 - x^{5/2}\right) dx$$

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3. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.1.015.** 0/15 Submissions Used

MY NOTES | ASK YOUR TEACHER

Evaluate the integral. Check your answer by differentiating. (Use C for the constant of integration.)

$$\int (12 - 6x + 21x^6)\, dx$$

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4. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.1.031.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

Use algebra to rewrite the integrand; then integrate and simplify. (Use C for the constant of integration.)

$$\int \frac{x+3}{x^3}\,dx$$

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5. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.1.035.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

If $\int f(x)\,dx = 3x^6 - 5x^4 + C$, find $f(x)$.

$f(x) =$

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6. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.2.001.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

Find the differential of the function.

$$u = 5x^3 + 4$$

$du =$

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7. [-/6.66 Points] DETAILS HARMATHAP12 12.2.005. 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

One of the parts of each integral can be integrated with the Power Rule and the other cannot. Integrate the part that can be done with the Power Rule. (Use C for the constant of integration. If the integral cannot be integrated with the power rule enter NA.)

(a) $\int (2x^4 - 4)^8(8x)\,dx$

(b) $\int (3x^3 + 19)^7(9x^2)\,dx$

Explain why the Power Rule cannot be used to evaluate the one of the integrals.

This answer has not been graded yet.

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8. [-/6.66 Points] DETAILS HARMATHAP12 12.2.009.MI. 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

Evaluate the integral. Check your result by differentiation. (Use C for the constant of integration.)

$$\int (7x^3 + 15)^4 21x^2\,dx$$

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9. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.2.012.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

Evaluate the integral. Check your results by differentiation. (Use C for the constant of integration.)

$$\int (3x^2 - 7x)^4(6x - 7)\,dx$$

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10. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.2.025.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

Evaluate the integral. Check your results by differentiation. (Use C for the constant of integration.)

$$\int (x^3 + 4)^2(3x\,dx)$$

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11. **[-/6.66 Points]** DETAILS **HARMATHAP12 12.3.001.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

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

$$\int 7e^{7x}\,dx$$

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12. [-/6.66 Points] DETAILS HARMATHAP12 12.3.005.EP. 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

Consider the following.

$$\int 4{,}000e^{0.1x}\,dx$$

Find a substitution to rewrite the integrand as $40{,}000e^{u}\,du$.

u =

du = ( ) dx

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

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13. [-/6.66 Points] DETAILS HARMATHAP12 12.3.009.MI. 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

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

$$\int x^2e^{6x^3}\,dx$$

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14. **[–/6.66 Points]** DETAILS **HARMATHAP12 12.3.015.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

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

$$\int \left(e^{9x} - \frac{7}{e^{x/2}} \right) dx$$

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15. **[–/6.76 Points]** DETAILS **HARMATHAP12 12.3.020.** 0/15 Submissions Used

MY NOTES ASK YOUR TEACHER

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

$$\int \frac{y}{y^2 + 6} \, dy$$

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