



Review Test Submission: Graded Exam - Unit 5

Course	MAT251: General Calculus II
Test	Graded Exam - Unit 5
Status	Completed
Score	135 out of 150 points
Time Elapsed	32 minutes out of 1 hour.
Instructions	

Question 1

7.5 out of 7.5 points

What is the difference between an indefinite integral and a definite integral?

Selected Answer: An indefinite integral has many possible functions as solutions, while a definite integral represents exactly one function.

Question 2

7.5 out of 7.5 points

Which of the following is an antiderivative of $f(x) = (\cos x)e^{\sin x}$?

Selected Answer: [REDACTED]

Question 3

7.5 out of 7.5 points

Which of the following is a solution of the differential equation $\frac{dy}{dx} = 6x$?

Selected Answer: [REDACTED]

Question 4

7.5 out of 7.5 points

Decide whether each of the following satisfies the differential equation $\frac{d^2y}{dx^2} - 9y = 0$.

$$y = xe^{3x}$$

Selected Answer: [REDACTED]

Question 5

7.5 out of 7.5 points

Decide which trigonometric substitution on the right could be used to evaluate each of the integrals on the left.

Question Selected Match

$$\int \frac{dx}{\sqrt{a^2 + x^2}}$$

[REDACTED]

OK

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

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

Question 6

7.5 out of 7.5 points

$$\int \frac{3}{4x^2 - 9} dx =$$

Selected Answer: **Question 7**

7.5 out of 7.5 points

Match each of the integrals on the left with the corresponding solution on the right.

Question Selected Match

$$\int \sec x dx \quad \blacksquare \quad \blacksquare$$

$$\int \csc x dx \quad \blacksquare \quad \blacksquare$$

$$\int \cot x dx \quad \blacksquare \quad \blacksquare$$

Question 8

7.5 out of 7.5 points

Decide whether each of the following integrals are improper.

$$\int_0^{\infty} \sqrt{x} dx$$

Selected Answer: **Question 9**

7.5 out of 7.5 points

Which of the following is true for any constant $a > 0$?Selected Answer: **Question 10**

7.5 out of 7.5 points

A function can have more than one antiderivative.

Selected Answer: **Question 11**

0 out of 7.5 points

If $f(x)$ is an even function, decide whether each of the following are true or false.

$$\int_{-a}^0 f(x) dx = -\int_0^a f(x) dx$$

Selected Answer: **Question 12**

7.5 out of 7.5 points

Decide whether each of the following are properties of integrals.

If c is a constant, then $\int cf(x)dx = c\int f(x)dx$

Selected Answer:

Question 13

7.5 out of 7.5 points

If $p > 1$, then $\int_1^{\infty} \frac{1}{x^p} dx$

Selected Answer:

Question 14

0 out of 7.5 points

The Mean Value Theorem for Integrals states that if f is continuous on $[a, b]$, then there exists a number c in $[a, b]$ for which

Selected Answer:

Question 15

7.5 out of 7.5 points

$\int \sec x dx =$

Selected Answer:

Question 16

7.5 out of 7.5 points

The Fundamental Theorem of Calculus states if f is continuous on $[a, b]$ and F is an antiderivative of f , then:

Selected Answer:

Question 17

7.5 out of 7.5 points

$\int \frac{x^2 - x + 9}{2x^3 + 5x^2 - 3x} dx =$

Selected Answer:

Question 18

7.5 out of 7.5 points

Which of the following best describes the Riemann sum?

Selected Answer:

Question 19

7.5 out of 7.5 points

If $f(x)$ is an even function, decide whether each of the following are true or false.

$\int_{-a}^a f(x) dx = \int_0^a f(x) dx$

Selected Answer:

Question 20

7.5 out of 7.5

Decide whether each of the following are properties of the definite integral.

points

$$\int_b^a f(x) dx = \int_a^b f(x) dx$$

Selected Answer: