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Announcements

Course

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Unit 8 - Week 6 :

Register for
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Course outline

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Lecture 26 : Beta & Gamma Function (Cont.)

Lecture 27 : Differentiation Under Integral Sign

Lecture 28 : Double Integrals

Lecture 29 : Double Integrals (Cont.)

Lecture 30 : Double Integrals (Cont.)

Quiz : Assignment 6

Feedback for Week 6

Week 7 :

Assignment 6

The due date for submitting this assignment has passed.

Due on 2019-03-13, 23:59 IST

As per our records you have not submitted this assignment.

1)

$$\int_0^p x^{m-1}(p-x)^{n-1} dx = \frac{1}{p^{m+n}} \beta(m, n)$$

1 point

- a. p^{m+n-1}
 b. p^{m+n}
 c. p^{m-n-1}
 d. p^{m-n+1}

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

2)

$$\int_0^{\frac{\pi}{2}} \sqrt{\tan \theta} d\theta = \frac{1}{2} \Gamma\left(\frac{3}{2}\right) \Gamma\left(\frac{1}{2}\right)$$

1 point

- a. $\frac{1}{2} \Gamma\left(\frac{3}{2}\right) \Gamma\left(\frac{1}{2}\right)$
 b. $\frac{1}{2} \Gamma\left(\frac{3}{2}\right) \Gamma\left(\frac{1}{4}\right)$
 c. $\frac{1}{2} \Gamma\left(\frac{3}{4}\right) \Gamma\left(\frac{1}{4}\right)$
 d. $\frac{1}{2} \Gamma\left(\frac{3}{4}\right) \Gamma\left(\frac{1}{2}\right)$

- (a)
 (b)

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(c)

3)

$$\int_0^1 x^4 \left(\ln \frac{1}{x}\right)^3 dx = \underline{\hspace{2cm}}$$

1 point

- a. $2/625$
 b. $6/625$
 c. $-6/625$
 d. $-2/625$

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

4)

$$\int_0^1 \int_0^{x^2} (x^2 + y^2) dx dy = \underline{\hspace{2cm}}$$

1 point

- a. $26/105$
 b. $4/105$
 c. $12/105$
 d. $16/105$

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

5)

$$\int_1^4 \int_0^{\sqrt{y}} e^{x/\sqrt{y}} dx dy = \underline{\hspace{2cm}}$$

1 point

- a. $\frac{12}{3}(e + 1)$
 b. $\frac{14}{3}(e - 1)$
 c. $\frac{12}{3}(e - 1)$
 d. $\frac{14}{3}(e + 1)$

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

6) If R is the region $0 \leq x \leq y \leq L$, then

1 point

$$\int \int_R (x^2 + y^2) dx dy = \text{_____}$$

- a. $\frac{L^2}{2}$
- b. $\frac{L^4}{3}$
- c. $\frac{L^4}{2}$
- d. $\frac{L^2}{3}$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(b)

7)

1 point

If $\int_0^3 \int_{x^2}^9 f(x, y) dy dx = \int_p^q \int_r^s f(x, y) dx dy$, then the values of p, q, r and s are

- a. $p = 0, q = -9, r = 0, s = \sqrt{y}$
- b. $p = 0, q = 1, r = 0, s = \sqrt{y}$
- c. $p = 0, q = 9, r = 0, s = -\sqrt{y}$
- d. $p = 0, q = 9, r = 0, s = \sqrt{y}$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(d)

8)

1 point

Area of the region enclosed by the curves $y_1 = e^x, y_2 = x^2 - 1, x = -1$ and $x = 1$ is

- a. $\frac{(3e^2 - 4e + 3)}{3e}$
- b. $\frac{(3e^2 - 4e - 3)}{3}$
- c. $\frac{(3e^2 + 4e - 3)}{3e}$
- d. $\frac{(3e^2 + 4e + 3)}{3}$

- (a)
- (b)
- (c)
- (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(c)

9)

1 point

The volume enclosed under the surface $z = \sqrt{1 - x^2}$ and above the triangle formed by $y = x = 1$ and the x - axis is

- a. $\frac{1}{3}$
 b. $\frac{-1}{3}$
 c. $\frac{2}{3}$
 d. $\frac{-2}{3}$

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

10. Using differentiation under integral sign, the value of the integral

1 point

$$\int_0^1 \frac{x^p - 1}{\log x} dx$$

is _____.

- a. $\log(p + 1)$
 b. $-\log(p + 1)$
 c. $\log(p - 1)$
 d. $-\log(p - 1)$

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

(a)

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