ⓘ Students have either already taken or started taking this quiz, so take care when editing it. If you change any quiz questions in a significant way, you might want to consider re-grading students' quizzes who took the old version of the quiz.

Points 100 Published

Details Questions

Show question details

Group 1

Group Name Pick 2 questions, 5 pts per question Pick □ questions, □ pts per question

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Question 1 pts

$\int_{-1}^{2}(4x^3 - 4x)dx = ?$

- 26 sq unit
- 25 sq unit
- 30 sq unit
- None of the above

Question 1 pts

State whether the following relation is True or False.

$\int_0^{2a} f(x)dx = \int_0^a f(x)dx + \int_0^a (f(a-x)dx$

- True
- False

Question 1 pts

State whether the following relation is True or False.

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

- True
- False

Group 2

Group Name Pick 4 questions, 10 pts per question Pick ☐ questions, ☐ pts per question

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Question 1 pts

In a bank principle amount increases continuously at a rate of 5% per year. In how many years Rs 1000 triple itself?

- $t = 20log(3)$
- $t = 20log(2)$
- $t = 20log(5)$
- None of the given

Question 1 pts

Find the particular solution of $\frac{dy}{dx} = -4y^2$, given that y=1 when x=0.

- $y = \frac{1}{4x+1}$
- $y = \frac{1}{2x^2+1}$
- $y = \frac{1}{4x-1}$

- None of the given

Question 1 pts

Solve the following ODE.

$\frac{dy}{dx} = \frac{1+y^2}{x}$

- $tan^{-1}y = logx + C$
- $tan^{-1}x = logy + C$
- $tan^{-1}y = -logx + C$
- None of the given

Question 1 pts

Find the degree and order of the following ODE.

$\frac{d^3y}{dx^3} + (\frac{d^2y}{dx^2})^2 + xy = 0$

- Degree 1 Order 3
- Degree 2 Order 3
- Degree 3 Order 2
- Degree 2 Order 2

Question 1 pts

Find the degree and order of the following ODE.

$(\frac{d^3y}{dx^3})^3 + (\frac{d^2y}{dx^2})^4 + xy = 0$

- Degree 3 Order 3
- Degree 3 Order 4
- Degree 4 Order 3

Degree 1 Order 3

Group

Group Name | Pick 2 questions, 15 pts per question | Pick [ ] questions, [ ] pts per question

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Question 1 pts

Consider the *radioactive decay law* described by the differential equation $\frac{dN(t)}{dt} = -\lambda N(t)$ where **N(t)** is the amount of radioactive material at instant t, **λ** is the positive constant depending upon the radioactive material. Find a general solution of the differential equation and find a particular solution of the differential equation given that at t=0, $N_0 = N(t)$

- $N(t) = N_0 e^{-\lambda t}$
- $N(t) = N_0 e^{\lambda t}$
- $N(t) = N_0 e^{-\lambda}$
- None of the given

Question 1 pts

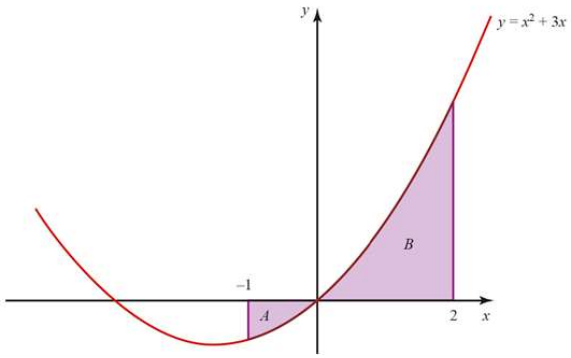
Find the area enclosed by the line $y = x + 1$ and $y = x^2 - x + 1$.

- $\frac{4}{3}$
- $\frac{9}{2}$
- $\frac{19}{3}$

None of the given

Question 1 pts

Find the total area under the curve $f(x) = x^2 - 3x$, between x=-1 and x=2.



$\frac{45}{6}$

$\frac{24}{6}$

$\frac{59}{6}$

None of the given

Group 3

Group Name Pick 1 questions, 20 pts per question Pick □ questions, □ pts per question

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Question 1 pts

Which of the following relations is/are true?

$\int_a^a f(x)dx = 0$

- [ ] $\int_a^b f(x)dx = \int_a^c f(x)dx + \int_c^d f(x)dx$
- [ ] $\int_a^b cf(x)dx = c\int_a^b f(x)dx$
- [ ]

Let f(x) be a function defined on an interval [a, b], the ***definite integral*** of f from a to b is given by

$\int_a^b f(x)dx = \lim_{n\to\infty} \sum_{i=1}^n fx_i)\delta x$

- [ ] All of the given answers are correct

+ New question + New question group Find questions

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