ⓘ 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

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Group 1

Group Name Pick 3 questions, 5 pts per question Pick ☐ questions, ☐ pts per question

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Question 1 pts

$\int \frac{4}{1+x^2} dx = ?$

- $4tan^{-1}x + C$
- $tan^{-1}x + C$
- $4cot^{-1}x + C$
- None of the given

Question 1 pts

$\int \frac{1}{ax+b} dx = ?$

- $\frac{1}{a} log|ax+b| + C$
- $log|ax+b| + C$

- $\frac{1}{b}log|ax+b|+C$
- None of the given

Question 1 pts

For what value of x is the function $f(x)=\frac{x+1}{x-5}$

- None of the given
- 1
- 4
- -5

Question 1 pts

$\frac{d}{dx}sec^{-1}|x|=?$

- $\frac{1}{x\sqrt{x^2-1}}$
- $\frac{1}{x\sqrt{x^2+1}}$
- $\frac{1}{\sqrt{x^2-1}}$
- $\frac{1}{\sqrt{x^2+1}}$

Question 1 pts

Consider the function $f(x)=(x-2)^2-1, x\in R$ what is the derivative of $f(x)$ at x=2?

- 1
- -2
- 2
- None of the given

Group 2

Group Name Pick 5 questions, 10 pts per question Pick □ questions, □ pts per question

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Question 1 pts

What is the antiderivative of $\frac{x^3-1}{x^2}$

- $\frac{x^2}{2}+\frac{1}{x}+C$
- $\frac{x^3}{3}+\frac{1}{x}+C$
- $\frac{2}{x^2}+\frac{1}{x}+C$
- None of the given

Question 1 pts

what is the antiderivative of $2xsin(x^2+1)$?

- $-cos(x^2+1)+C$
- $cos(x^2+1)+C$
- $-cos(\frac{x^2}{3}+x)+C$
- $cos(\frac{x^2}{3}+x)+C$

Question 1 pts

$\int tan(2x+3)dx =?$

- None of the given
- $\frac{sec^2(2x+3)}{2}$
- $-\frac{sec^2(2x+3)}{2}$
- $\frac{sec(2x+3)}{2}$

Question 1 pts

Find the equation curve passes through (2,3) and the gradient of the curve is given by $\frac{dy}{dx} = 2x$

- $y = x^2 - 1$
- $y = x^2 + 1$
- $y = x^2 + 2$
- $y = -x^2 + 2$

Question 1 pts

$\int \frac{sin(tan^{-1}x)}{1+x^2} dx$=?

- $-cos(tan^{-1}x) + C$
- $cos(tan^{-1}x) + C$
- $-cos(sec^{-1}x) + C$
- None of the given

Question 1 pts

$\int x^2 log x dx$ =?

- $\frac{1}{3}x^3 log(x) - \frac{1}{9}x^3 + C$
- $\frac{1}{3}x^3 log(x) + \frac{1}{9}x^3 + C$
- $\frac{1}{3}x^3 log(x) - \frac{1}{3}x^3 + C$
- $\frac{1}{3}x^3 log(x) + \frac{1}{3}x^3 + C$

Question 1 pts

What is an antiderivative of $\frac{1-sinx}{cos^2 x}$

- $tanx - secx + C$
- $tanx + secx + C$
- $cos^2 x - sinx + c$
- None of the given

Group 3

Group Name Pick 1 questions, 15 pts per question Pick questions, pts per question

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Question 1 pts

$\int sinx.e^x dx = ?$

- $\frac{1}{2}[e^x sinx - e^x cosx] + C$
- $\frac{1}{2}[e^x sinx + e^x cosx] + C$
- $\frac{1}{2}[e^x sinx - cosx] + C$
- None of the given

Question 1 pts

Let $f(x)$ and $g(x)$ be two functions. Which statements are True? **Select all true statements.**

- $\frac{d}{dx}\int f(x)dx = f(x)$ and $\int \frac{d}{dx} f(x)dx = f(x) + C$, where c is and arbitrary constant.
- $\int [f(x) \pm g(x)]dx = \int f(x)dx \pm \int g(x)dx$
- for any real number k, $\int kf(x)dx = k\int f(x)dx$
- All the given choices are correct.

Group 4

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

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Question 1 pts

A curve with equation $y = f(x)$passes through the point (1, 2) and the gradient of the curve is given by $\frac{dy}{dx} = 2x^3 - \frac{1}{x^2}$ Find the equation of the curve.

- $y = \frac{1}{4}x^4 + \frac{1}{x} + \frac{1}{2}$
- $y = \frac{1}{4}x^4 + \frac{1}{x} - \frac{15}{2}$
- $y = \frac{1}{4}x^4 + \frac{1}{x} + \frac{15}{2}$
- $y = \frac{1}{4}x^4 + \frac{1}{x} - \frac{1}{2}$

Question 1 pts

The equation $\frac{x^2}{2} + \frac{y^2}{3} = 1$ represents an ellipse. Which of the following equations represent the tangent lines to the ellipse at point $x = 1$ (select all correct answers)?

Hint: Equation of a tangent line to a curve $y = f(x)$ at point $x = a$ is given by: $y - f(a) = f'(a)(x - a)$, where $f'(a)$ represents derivative of $f(x)$ at $x = a$.

- $y - \sqrt{\frac{3}{2}} = -\sqrt{\frac{3}{2}}(x - 1)$
- $y + \sqrt{\frac{3}{2}} = \sqrt{\frac{3}{2}}(x - 1)$
- $y - \sqrt{\frac{3}{2}} = -\sqrt{\frac{2}{3}}(x - 1)$
- $y - \sqrt{\frac{2}{3}} = \sqrt{\frac{2}{3}}(x - 1)$

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