

json -> latex convert test

kora

## Questions

1. Find the derivative of  $f(x) = x^3 - 4x + 2$ . [5]

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2. Evaluate the integral  $\int (2x^2 + 3x - 1)dx$ . [5]

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3. Given  $f(x) = e^{2x}$ , find the equation of the tangent line to the curve at  $x = 1$ . [5]

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4. Determine the value of  $\lim_{h \rightarrow 0} \frac{(3+h)^2 - 9}{h}$ . [5]

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5. Find the derivative of  $g(x) = \ln(x^2 + 1)$ . [5]

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6. Evaluate  $\int \sin(3x)dx$ . [5]

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7. Find the area between the curve  $y = x^2$  and the x-axis from  $x = 0$  to  $x = 1$ . [5]

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8. Solve the differential equation  $y' = 2x$ , given that  $y(0) = 5$ . [5]

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