json -> latex convert test

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Questions

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

2. Evaluate $\int_1^3 (2x - 1)dx$. [5]

3. Given the function $g(x) = \sin(3x)$, find the second derivative at $x = \frac{\pi}{6}$. [5]

4. Find the area under the curve of $y = x^2 - 4$ from $x = -1$ to $x = 3$. [5]

5. The function $h(x) = e^{2x} + x^2$ is given. Find the derivative of $h(x)$ at $x = 0$. [5]

6. Calculate the definite integral $\int_0^{\pi/4} (\cos^2(x)) dx$. [5]

7. Given that $f(x) = \ln(x^3 + 1)$, find the derivative at $x = 1$. [5]

8. Evaluate $\int_{-1}^2 (3x + 5) dx$. [5]

9. For the function $p(x) = x^4 - 2x^3 + x$, find its critical points and determine if they [5] are local maxima or minima.

10. Calculate the indefinite integral $\int (4x^3 - 2x + 7) dx$. [5]