

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (2 points) Compute $g'(x)$ given that $g(x) = \sqrt{\tan(x^6 + 3x)}$.

2. (3 points) Given $h(t) = \ln(t^3 + 4t^2 + 6)$, find its second derivative $h''(t)$.

3. (3 points) Find the equation of the line tangent to the curve $x^3 + y^3 = xy^2 + 5$ at the point $(1, 2)$.

4. (2 points) Compute $\frac{dy}{dx}$ given that $y = (\sin x)x^2$.