

Name _____

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

1. (3 points) Given $g(t) = e^{t^3}$, find its second derivative $g''(t)$.

2. (2 points) Compute $f'(r)$ given that $f(r) = \arctan(\sqrt{r^2 + 5})$.

3. (2 points) Compute $\frac{dy}{dx}$ given that $y = (\sin x)^{5x^2}$.

4. (3 points) Find the equation of the line tangent to the curve $5y^4 - x^3 = x^2y - 7$ at the point $(x, y) = (2, 1)$.