

Name _____

- You have 20 minutes
- No calculators
- Show sufficient work

1. (2 points) Given $R(t) = \sin(t^4)$, find its second derivative $R''(t)$.

2. (3 points) Compute $w'(x)$ given that $w(x) = \tan^5(\sqrt{x^8 + 22})$.

3. (2 points) Compute $\frac{dy}{dx}$ for the given function. Write your answer completely in terms of x .

$$y = (x^3 + 5)^{1/x^2}$$

4. (3 points) Compute $\frac{dy}{dx}$ given that $x^2 e^{3y} = \ln(x^3 y^2)$.