

Read directions carefully and *show your work*. Partial credit will be assigned based upon the correctness, completeness, and clarity of your answers.

1. (3 pts) Find $f'(t)$ if $f(t) = t^2 \cdot \ln(\sin t)$.

2. (3 pts) Consider $y(x) = \sqrt{1 - \sqrt{x}}$, find $\frac{dy}{dx}$. Express your answer without using negative exponents.

3. (4 pts) Find $\frac{dy}{dx}$ when $\sin y + x^2y + y^3 = x^2$.