

Math 106 Honors (Quiz 9)

Name _____.

Make sure you show all your work!

1. (12 points)

(a) Find the Taylor series (first 4 nonzero terms) about $x = 0$ for $f(x) = x^2 e^{-x^2}$.(b) Find the Taylor series (first 4 nonzero terms) about $x = 0$ for $f(x) = \frac{1}{\sqrt{1-2x}}$.(c) Find the value of the infinite series $4 - 2 + 1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \dots$.2. (8 points) Draw the slope field for the differential equation $y' = 1 - y$. Then draw possible graphs of the solutions satisfying the initial conditions $y(0) = 1$, $y(1) = 2$, and $y(-1) = 0$ respectively.