Name ____________________________________________

- Show sufficient work to justify each answer.
- No calculators, notes, books, etc allowed.
- You have 15 minutes for this quiz.

1. Find the derivatives of the following. You need not simplify algebraically. Use proper notation.

   (a) (2 points) \( f(x) = \frac{1}{\sqrt{\cot(x^2)} + 12} \)

   (b) (2 points) \( g(\theta) = 9\sin^{-1}(4\theta - 18) + 6\csc(\theta) \)
2. (3 points) Find $\frac{d^2y}{dx^2}$ if $y = \tan(5x)$.

3. (3 points) Find the equation of the line tangent to the curve

$$\sin(y) + 7\cos(x) = 5y$$

at the point $(\pi/2, 0)$. 