

1. **Solve two of the following parts. Please put an X through the parts you do not want graded.** Compute the derivative for each of the following. Full simplification is not necessary, but your final answer should not have any derivatives.

(a) $f(x) = 5 \tan(x) + \cos(2x^{10} + 1)$

answer:

(b) $y = \frac{\sin(5x)}{x^2 + 1}$

answer:

(c) $y = \sqrt{\sec(5x - 1)}$

answer:

(d) $y = e^{x \cot(x)}$

answer:

2. Find $\frac{dy}{dx}$ of the equation $x^2 + 3xy + y^2 = \tan^2(x)$ using implicit differentiation.

answer: