

Circle your Instructor: Faudree, Williams, Zirbes

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Name: _____

This is a 30 minute quiz. There are 15 problems. Books, notes, calculators or any other aids are prohibited. Calculators and notes are not allowed. **Your answers should be simplified unless otherwise stated.** They should begin $y' =$ or $f'(x) =$ or $dy/dx =$, etc. There is no partial credit. If you have any questions, please raise your hand.

Circle your final answer.

For each function below, find the derivative.

1. $g(x) = 2x^{4.3} - \sqrt{2x} + \frac{e}{2}$

2. $f(x) = \csc(4x) + 3^x$

3. $F(\theta) = 6\theta \tan(\theta)$

4. $F(x) = \frac{e^x}{1-x+x^2}$ (Use the Quotient Rule.)

5. $h(x) = (4x + 1)(2 - x)^5$

6. $y = \frac{\sqrt{6}}{5} + \frac{1}{5x} - \frac{x}{3}$

7. $y = \frac{-9}{\sqrt{x^2+4}}$

8. $z = \frac{t^3 - 7t + 2}{\sqrt{t}}$

9. $h(x) = x(\ln x)(\cos x)$

10. $y = 9x^{5/3}(x + 2)$

11. $G(x) = \ln \left(\frac{xe^x}{(x^3+1)^2} \right)$

12. $g(x) = xe^{1/x}$

13. $f(x) = (x + \sec(5x))^{-4}$ [You don't need to simplify, but use parentheses correctly.]

14. $H(x) = \arctan(e^{3x})$

15. Find dA/dt for $A = C \arccos(kt) + 2Ck$ where C and k are fixed constants.