

Circle your Instructor: Faudree, Williams, Zirbes

_____ / 15

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. $g(x) = 4x^\pi - e^2$

2. $F(\theta) = \theta \tan(\theta)$

3. $f(x) = 5^x - \cot(3x)$

4. $y = \frac{-3}{\sqrt{4-x^2}}$

5. $h(x) = (2x + 4)(2 - x)^3$

6. $y = \frac{3}{x} - \frac{x}{2}$

7. $F(x) = \frac{\sin(x)}{x^2+1}$ (Use the Quotient Rule.)

8. $z = \frac{2s^2 - 3s + 1}{\sqrt{s}}$

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

10. $G(x) = \ln \left(\frac{xe^x}{(x^2 + 5)^2} \right)$

11. $h(x) = xe^x(\sin x)$

12. $H(x) = \arccos(\ln(4x))$

13. $f(x) = (2x + \cos(4x))^{-3}$ [You don't need to simplify, but use parentheses correctly.]

14. $g(x) = xe^{1/x^2}$

15. Find dP/dr for $P = A \arctan(mr) + 2Am$ where A and m are fixed constants.