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. $g(x) = 3x^\pi - e^3$

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

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

4. $y = \frac{-5}{\sqrt{x^2-9}}$

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

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

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

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

9. $y = 3x^{5/2}(x - 1)$

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

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

12. $H(x) = \arccos(\ln(2x))$

13. $f(x) = (2x + \cos(5x))^{-5}$ [You don't need to simplify, but use parentheses correctly.]

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

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