

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.

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For each function below, find the derivative.

1.  $g(x) = 2x^{3.2} - \sqrt{3x} + e^4$

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

3.  $f(x) = 4^x + \csc(8x)$

4.  $y = \frac{-9}{\sqrt{x^2+16}}$

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

6.  $y = \frac{\sqrt{2}}{3} - \frac{1}{3x} + \frac{x}{5}$

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

8.  $z = \frac{t^3 - 9t + 4}{\sqrt{t}}$

9.  $y = 15x^{4/3}(x + 2)$

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

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

12.  $H(x) = \arctan(e^{2x})$

13.  $f(x) = (x + \sec(9x))^{-3}$  [You don't need to simplify, but use parentheses correctly.]

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

15. Find  $dP/dr$  for  $P = A \arcsin(cr) + 2Ac$  where  $A$  and  $c$  are fixed constants.