Circle your Instructor: Faudree, Williams, Zirbes ⎯⎯⎯⎯ / 15

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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. $g(x) = 2x^e + \ln 2$

2. $f(x) = 5^x + \cot(2x)$

3. $F(\theta) = \theta \sec(\theta)$

4. $y = \dfrac{x}{6} - \dfrac{1}{4x^2}$

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

6. $F(x) = \dfrac{e^x}{2x^2 + 1}$ (Use the Quotient Rule.)

7. $y = \dfrac{-3}{\sqrt{x^4 + 4}}$

8. $h(x) = x^2(\ln x)(\sin x)$

9. $y = 8x^{3/2}(x - 1)$

10. $y = \dfrac{x^2 - 4x + 2}{\sqrt{x}}$

11. $G(x) = \ln\left(\dfrac{xe^{2x}}{(x^2 + 2)^4}\right)$

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

13. $H(x) = \arcsin(e^{2x})$

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

15. Find dz/dr for $z = C\arctan(br) + Cb$ where C and b are fixed constants.