Math 16A - Derivative Review

Directions

1. Use the definition of the derivative to compute $f'(x)$

2. Use any rule(s) you know to compute the derivative of the function

3. Use any rule(s) you know to compute the derivative of the function

4. Use the product, quotient or chain rule (or combination) to take the derivative

5. Find the equation of the tangent line to the curve at the indicated point

6. Create your own derivative problem that requires the given rule(s) and solve it
Group 1
1. $x^2 + 2x + 4$
2. $x^{44} - x^{3/4} + \sin(3x) - 2$
3. $\cot\left(\sqrt{\sin(e^{2x})}\right)$
4. $\frac{(x^2 - 1)^2}{x^2 + 1}$
5. $e^x + x^2, \quad x = 0$
6. Chain and Chain

Group 3
1. $\sqrt{x} - 4$
2. $3x^{4/3} + 5x^8 - 2\tan(2x) + \pi x$
3. $(14x^6 - 1)^3 \cdot \sin(-x)$
4. $e^{x^2+2x+2} \cdot \cos(\sqrt{x})$
5. $\tan\left(\frac{x}{2}\right), \quad x = \frac{\pi}{2}$
6. Product and Quotient

Group 2
1. $\frac{1}{5x}$
2. $\sqrt{x} - \frac{1}{x^5} + e^{x+3} - x$
3. $\frac{e^{6x} - 2x^3}{\csc(-x)}$
4. $\tan(\sec(\sqrt{x^3}))$
5. $\sqrt{2x}, \quad x = 8$
6. Chain and Product

Group 4
1. $x^2 + 7x - 3$
2. $\csc(2x) - 6\sqrt{3x} + \frac{6}{x^7} - e^{x^2}$
3. $\sec\left(x^2e^{4x}\right)$
4. $\cot\left(\frac{x + 1}{x - 1}\right)$
5. $x^6 + x^5 + 7x - 4, \quad x = 0$
6. Chain and Quotient