Practice worksheet | Differentiation and applications

Natural exponential function and its derivative

Name: _____ Date: _____

6 questions | 14 marks

1. Differentiate $7e^x - 3$. [2 marks]

2. Differentiate e^{-3x}. [2 marks]

3. Differentiate $e^{x^2 + 2x}$. [2 marks]

4. Find the tangent to $y = e^{2x}$ at $x = 0$. [2 marks]

5. Differentiate x^2e^{-x}. [3 marks]

6. Explain why $f(x) = e^{x^2}$ decreases for $x < 0$ although e^u increases with u. [3 marks]