Practice worksheet | Differentiation and applications

Quotient rule

Name: _____ Date: _____

6 questions | 14 marks

1. Differentiate $(3x + 1)/(x + 2)$. [2 marks]

2. Differentiate $(x^2 - 4)/x$ efficiently. [2 marks]

3. Find $f'(2)$ if $f(x) = x^2/(x + 1)$. [2 marks]

4. Differentiate $e^x/(x+1)$. [2 marks]

5. Find the tangent to $y=(x+1)/(x-1)$ at $x=0$. [3 marks]

6. Why is the derivative formula for $(x^2-1)/(x-1)$ not valid at $x=1$, even though cancellation gives $x+1$ elsewhere? [3 marks]