Practice worksheet | Differentiation and applications

Product rule

Name: _____ Date: _____

6 questions | 14 marks

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

2. Differentiate x^3e^x. [2 marks]

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

4. Differentiate $x\cos x$. [2 marks]

5. Find the tangent to $y = (x^2 + 1)(x + 1)$ at $x = 0$. [3 marks]

6. A rectangle has width x cm and length $(10 - x)$ cm. Find the derivative of its area and explain why a product rule is relevant. [3 marks]