Practice worksheet | Introduction to calculus

Simple optimisation

Name: _____ Date: _____

6 questions | 26 marks

1. A rectangle has perimeter 24m. Find its maximum area. [4 marks]

2. A rectangle beside a wall has 36m of fencing for the other three sides. Find its maximum area. [4 marks]

3. Maximise $P(x) = -2x^2 + 24x - 10$ on $[0, 10]$. [4 marks]

4. Minimise $C(x) = x^2 - 10x + 40$ on $[0, 8]$. [4 marks]

5. Maximise $f(x) = 100 - (x - 8)^2$ on $[0, 6]$. [4 marks]

6. An open box is made by removing squares of side x cm from each corner of a 12cm square, then folding. Find the greatest volume. [6 marks]