

Worksheet: Applications of Derivatives

IB · Class 12 · Mathematics · 5 questions · 15 marks

Name: _____

Date: _____

Score: _____ / 15

Q1. Find two positive numbers with sum 16 and maximum product. [3 marks]

Q2. Find the intervals where $f(x) = 2x^3 - 15x^2 + 36x + 7$ is increasing or decreasing. [3 marks]

Q3. Find the tangent and normal to $x^2 + y^2 = 25$ at (3,4). [3 marks]

Q4. A disc's radius increases at 0.02 cm/s. Find the rate of increase of area at $r = 7$ cm. [2 marks]

Q5. Find the absolute maximum and minimum of $f(x) = 2x^3 - 3x^2 - 12x + 5$ on $[-2, 3]$. [4 marks]
