

Worksheet: Continuity and Differentiability

Punjab State Board · Class 12 · Mathematics · 3 questions · 11 marks

Name: _____

Date: _____

Score: _____ / 11

Q1. Find the value of k that makes $f(x) = \begin{cases} kx + 1 & \text{if } x \leq 0 \\ \cos x & \text{if } x > 0 \end{cases}$ continuous at $x = 0$. [3 marks]

Q2. Differentiate $y = \sin(x)$ with respect to x . [4 marks]

Q3. Verify the Mean Value Theorem for $f(x) = x(x-1)(x-2)$ on $[0, 1/2]$. [4 marks]
