

Worksheet: Relations and Functions

IB · Class 12 · Mathematics · 5 questions · 17 marks

Name: _____

Date: _____

Score: _____ / 17

Q1. Check whether $R = \{(1,1),(2,2),(3,3),(4,4),(1,2),(2,1)\}$ on $A = \{1,2,3,4\}$ is an equivalence relation. [3 marks]

Q2. Prove $f: \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = 4x + 7$ is invertible and find f inverse. [3 marks]

Q3. If $f(x) = x^2$ and $g(x) = 2x+1$, find $(g \circ f)(x)$ and $(f \circ g)(x)$. Are they equal? [3 marks]

Q4. For $a * b = a + b + ab$ on \mathbb{R} , check commutativity and associativity and find the identity. [4 marks]

Q5. Show $f: \mathbb{R} - \{-2\} \rightarrow \mathbb{R} - \{4\}$, $f(x) = \frac{4x+3}{x+2}$ is bijective. [4 marks]
