

Worksheet: Relations and Functions

Kerala State Board · 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 $f: \mathbb{R} - \{-2\} \rightarrow \mathbb{R} - \{4\}$, $f(x) = (4x+3)/(x+2)$ is bijective. *[4 marks]*
