

Worksheet: Relations and Functions (Class 12)

Punjab State Board · Class 12 · Mathematics · 3 questions · 13 marks

Name: _____

Date: _____

Score: _____ / 13

Q1. Show that the relation R in the set \mathbb{Z} of integers defined by $R = \{(a,b) : 2 \text{ divides } (ab)\}$ is an equivalence relation. [3 marks]

Q2. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 2x + 3$. Show that f is bijective and find f^{-1} . [4 marks]

Q3. Let $f: A \rightarrow B$ and $g: B \rightarrow C$ be two functions. Prove that if both f and g are onto, then $g \circ f: A \rightarrow C$ is also onto. Is the converse true? Justify. [6 marks]
