



RBSE

CHAPTERWISE PYQ

MATHS

2013 - 2026

$$\frac{1}{n} \sum_{n=1}^n \frac{1}{n^2}$$



$$\pi(x) \sim \frac{x}{\log x}$$

$$1+2+3+\dots+n = \frac{n(n+1)}{2}$$

$$(a+b)^2 = a^2 + 2ab + b^2$$

$\sqrt{5}$ is irrational

$$\frac{1}{1+\frac{1}{1+\frac{1}{1+\frac{1}{\dots}}}} = \frac{\sqrt{5}-1}{2}$$

$$\tau(n) = \sum_{d|n} 1$$

(divisor function)

$$p(n) \sim \frac{1}{4n\sqrt{3}} e^{\pi\sqrt{2n/3}}$$

(partition function)

$$e = [2, 1, 2, 1, 1, 4, 1, 1, 6, \dots]$$

$$1729 = 1^3 + 12^3 = 9^3 + 10^3$$

(Hardy-Ramanujan number)



Class
12

WhatsApp: 921-6765-400 Website: boardzone.in YouTube: BOARD ZONE

01

RELATIONS AND FUNCTIONS

[Section-A]

Multiple Choice Questions:-

1. If $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined $f(x) = x^4$, then the function. [1M]
(a) f is one-one and onto (b) f is many-one-onto
(c) f is one-one but not onto (d) f is neither one-one nor onto
(RBSE 2022)
2. If $f: \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = \sin x$ and $g: \mathbb{R} \rightarrow \mathbb{R}$, $g(x) = x^2$ then $(f \circ g)(x)$ is equal to: [1M]
(a) $\sin x^2$ (b) $\sin x$
(c) $\sin^2 x^2$ (d) $\sin^2 x$
(RBSE 2023)
3. Let R be the relation in the set $\{1, 2, 3, 4\}$ given by $R = \{(1, 2), (2, 2), (1, 1), (4, 4), (1, 3), (3, 3), (3, 2)\}$ choose the correct answer in the given options. [1M]
(A) R is reflexive and symmetric but not transitive.
(B) R is reflexive and transitive but not symmetric.
(C) R is symmetric and transitive but not reflexive.
(D) R is an equivalence relation.
(RBSE 2024)
4. Let R be the relation defined on the set $\mathbb{N}$ and given by $\{(a, b): a = b - 2, b < 6\}$, then range of R will be -
A) $\{1, 2, 3\}$ B) $\{1, 2, 3, 4, 5\}$
C) $\{3, 4, 5\}$ D) $\{3, 4, 5, 6\}$ [1M]
(RBSE 2025)
5. If $f: \mathbb{R} \rightarrow \mathbb{R}$ be given by $f(x) = (3 - x^3)^{1/3}$, then $f \circ f(x)$ is equal to [1M]
(A) $x^{1/3}$ (B) x^3
(C) x (D) $3 - x^3$
(RBSE 2026)

Long Answer Type Questions:-

- YouTube: BOARD ZONE**

★ RBSE 2026 ★ TOPPERS



— EXCELLENCE. DEDICATION. SUCCESS. —

99%



TANISHA JAIN

99%



**ADITYA RAJ
CHOHAN**

98%



SIMMI CHOUDHARY

*Proudly
Dedicated
by
Students!*



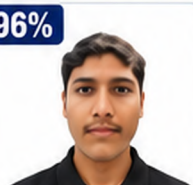
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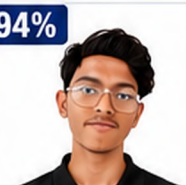
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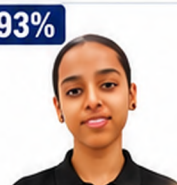
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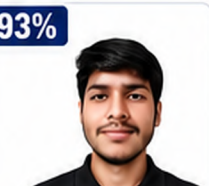
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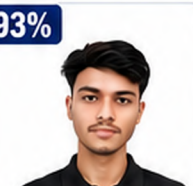
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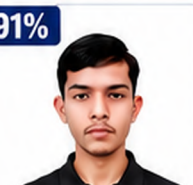
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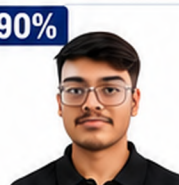
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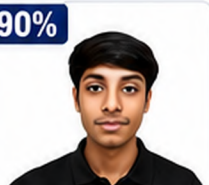
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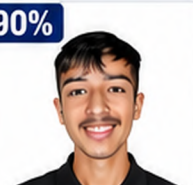
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KESHAV GURJAR

★★★
**ENDLESS
RESULTS
MORE...**

~ Results Claimed by Students ~