

JEE Mains Crash Course 2020



22nd Oct to 31st Dec

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Practice Questions Sets And Relations

Topics Covered:

1. Introduction
2. Introduction Of Sets
3. Type Of Sets
4. Subset Of A Set
5. Venn Diagram

6. Properties Of Venn Diagram

7. Relation

8. Types Of Relation

9. Equivalence Relation

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Question Number: 1

Let

$$P = \{(x, y) \mid x^2 + y^2 = 1, x, y \in R\}.$$

Then, P is

(A) Reflexive

(B) Symmetric

(C) Transitive

(D) Anti-symmetric

CORRECT ANSWER: B

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Question Number: 2

A relation R on set of complex numbers defined by

$Z_1 R Z_2 \Leftrightarrow \frac{Z_1 - Z_2}{Z_1 + Z_2}$ is real then which of the following is not true ?

- (A) R is reflexive
- (B) R is symmetric
- (C) R is transitive
- (D) R is not equivalence

CORRECT ANSWER: D

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Question Number: 3

In a town of 10,000 families it was found that 40% families buy newspaper A , 20% families buy newspaper B and 10% families buy newspaper C , 5% families buy A and B , 3% buy B and C and 4% buy A and C . If 2% families buy all the three news papers, then number of families which buy newspaper A only is

- (A) 3100
- (B) 3300
- (C) 2900
- (D) 1400

CORRECT ANSWER: B

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Question Number: 4

A survey shows that 63% of the people watch a new channel whereas 76% watch another channel. If $x\%$ of the people watch both channels, then

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Question Number: 5

In a certain town 25% families own a cellphone, 15% families own a scooter and 65% families own neither a cellphone nor a scooter. If 500 families own both a cellphone and scooter, then total number of families in the town is

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Question Number: 6

Let U be the universal set and $A \cup B \cup C = U$ then
 $\{(A - B) \cup (B - C)$
 $\cup (C - A)\}'$
is equal to

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Question Number: 7

Suppose A and B are two sets, then $(A \cup B)' \cup (A' \cap B)$
is equal

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Question Number: 8

If $a \in N$ such that $aN = \{ax : x \in N\}$. Describe the set
 $3N \cap 7N$.

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Question Number: 9

Let F_1 be the set of parallelograms, F_2 the set of rectangle , F_3 the set of rhombuses, F_4 the set of squares and F_5 the set of trapeziums in a plane. Then, F_1 may be equal to

- (A) $F_2 \cap F_3$
- (B) $F_3 \cap F_4$
- (C) $F_2 \cup F_5$
- (D) $F_2 \cup F_3 \cup F_4 \cup F_1$

CORRECT ANSWER: D

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Question Number: 10

If set A and B are defined as

$$A = \left\{ (x, y) \mid y = \frac{1}{x}, 0 \right.$$

$$\neq x \in R \left. \right\}, B = \{(x, y)$$

$$\mid y = -x, x \in R, \}$$

. Then

(A) $A \cap B = A$

(B) $A \cap B = B$

(C) $A \cap B = \phi$

(D) $A \cup B = A$

CORRECT ANSWER: C

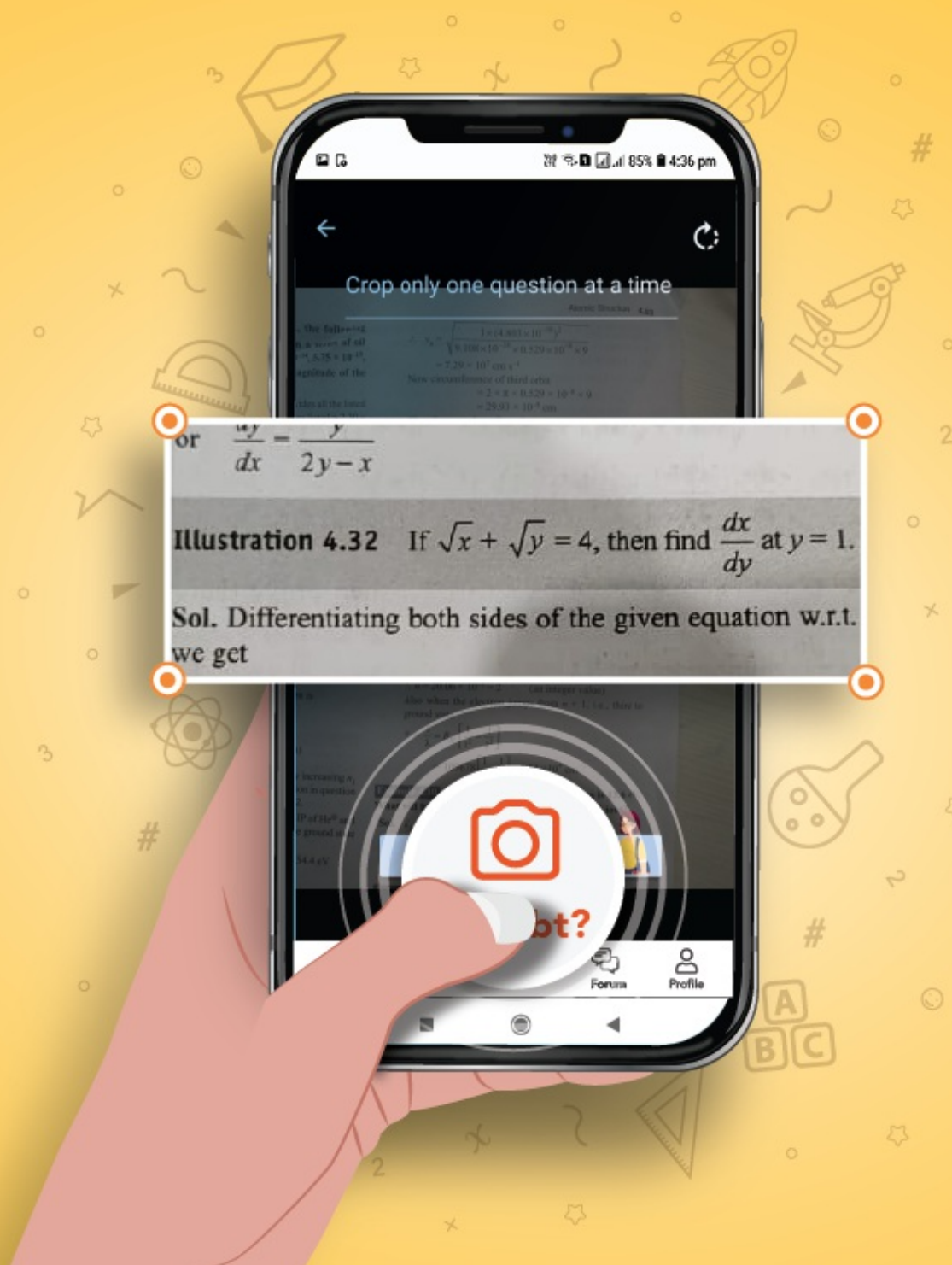
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