

MATHEMATICS

Case study-1

Chapter name - Number System

- *Read the passage and answer the questions given below :*

Two classmates Nitya and Salma simplified two different expressions during the revision hour and explained to each other their simplifications . Nitya explains simplification of $\sqrt{2}/\sqrt{5}+\sqrt{3}$ by rationalising the denominator and Salma explains the simplifications of $(\sqrt{2}+\sqrt{3})(\sqrt{2}-\sqrt{3})$ by using the identity $(a+b)(a-b)$.



Answer the following questions :

1. What is the conjugate of $\sqrt{2}+\sqrt{3}$:-

- a) $\sqrt{2}+\sqrt{3}$**
- b) $\sqrt{2}-\sqrt{3}$**
- c) $\sqrt{2} \times \sqrt{3}$**
- d) $\sqrt{2}/\sqrt{3}$**

2. By rationalising the denominator of $\frac{\sqrt{2}}{\sqrt{5}+\sqrt{3}}$ Nitya got the answer

- a) $\frac{\sqrt{2}}{\sqrt{5}-\sqrt{3}}$
- b) $\frac{\sqrt{2}(\sqrt{5}-\sqrt{3})}{+}$
- c) $\sqrt{5}-\sqrt{3}$
- d) $\frac{\sqrt{2}(\sqrt{5}+\sqrt{3})}{+}$

3. Salma applied _____ identity to solve $(\sqrt{5}+\sqrt{3})(\sqrt{5}-\sqrt{3})$

- a) $(a+b)(a+b)$
- b) $(a+b)(a-b)$
- c) $(a-b)(a-b)$
- d) $(x+a)(x+b)$

4. $(\sqrt{2}+\sqrt{3})(\sqrt{2}-\sqrt{3})$ is _____

- a) -1
- b) 1
- c) 3
- d) -3

5. Addition of two rational numbers is equal to _____

- a) rational
- b) irrational
- c) integers
- d) whole numbers