

NUMBER SYSTEM (IX)

1. The square root of which number is rational 1

- a) 7 b) 19.6 c) 0.04 d) 13

2. If $4^{2x} = \frac{1}{8}$, then the value of x is: 1

- a) $\frac{3}{4}$ b) $-\frac{3}{4}$ c) $-\frac{4}{3}$ d) $\frac{4}{3}$

2. **Assertion:** 0.329 is a terminating decimal.

Reason: A decimal in which a digit or a set of digits is repeated periodically, is called a repeating, or a recurring decimal. 1

a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

(c) Assertion (A) is true but reason (R) is false.

(d) Assertion (A) is false but reason (R) is true.

3. Show that $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$. 3

4. If $x = 2 + 3\sqrt{2}$, then find the value of $(x + \frac{14}{x})$. 3

5. Mrs. Rakhi lives in an undeveloped area where there is no facility of proper education. But one thing is available in that area i.e., network. Since she was very keen to take education, so she decided to complete her education through e-learning. One day she was studying number system, where she learnt about rational numbers, irrational numbers and decimal numbers, etc. 4

i) Convert the rational number $\frac{2}{15}$ into decimal.

ii) Write one irrational number between 2.365 and 3.125.

iii) If $x + \sqrt{2} = 3$, then find the value of $\frac{1}{x}$.

iv) Find the product of $(7 + 3\sqrt{2})$ & $(7 - 3\sqrt{2})$.

