

Tarun Classes of Mathematics

IIT-JEE Mains | CBSE | PU-CET | NDA

CLASS 9 – CBSE | MATHEMATICS

The World of Numbers

SECTION -A (Multiple choice questions)

1. Brahmagupta, who gave the rules for operations with positive and negative numbers, was born in:
(a) 476 CE (b) 598 CE (c) 628 CE (d) 700 CE
2. $\frac{p}{q}$ form of $0.000\overline{2}$ is
(a) $\frac{1}{4500}$ (b) $\frac{1}{3200}$ (c) $\frac{1}{3600}$ (d) $\frac{1}{9000}$
3. A rational number between $\sqrt{2}$ and $\sqrt{3}$:
(a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\frac{\sqrt{2}\cdot\sqrt{3}}{2}$ (c) 1.5 (d) 1.8
4. Value of $2.999999\ldots$ in form of $\frac{p}{q}$ is :
(a) $\frac{29}{10}$ (b) 3 (c) $\frac{2900}{1000}$ (d) none of these
5. Which of following rational number has terminating decimal expansion :
(a) $\frac{2}{15}$ (b) $\frac{11}{160}$ (c) $\frac{17}{60}$ (d) $\frac{6}{35}$
6. Which of the following is irrational?
(a) 0.14 (b) $2.327327327\ldots$ (c) $0.4014001400014\ldots$ (d) $\sqrt{225}$
7. The set of natural numbers is closed under:
(a) Subtraction (b) Division (c) Addition (d) None of these
8. Decimal representation of $\frac{246}{2^8 \times 5^3}$ will be Terminate:
(a) after 6 decimal place (b) after 7 decimal place
(c) not terminate (d) after 3 decimal place
9. The decimal expansion of the number $\sqrt{2}$ is
(a) a finite decimal (b) 1.41421
(c) non-terminating recurring (d) non-terminating non-recurring
10. The decimal expansion of the rational number $\frac{14587}{1250}$ will terminate after:
(a) one decimal place (b) two decimal places

(c) three decimal places

(d) four decimal places

11. A spice trader takes a debt of ₹850. The next day he earns a profit of ₹1,200. The following week he incurs a loss of ₹450. What is his final financial position?

(a) Profit of ₹100

(b) Loss of ₹100

(c) Profit of ₹1,600

(d) Loss of ₹1,600

12. Between two rational numbers

(a) there is no rational number

(b) there is exactly one rational number

(c) there are infinitely many rational numbers

(d) there are only rational numbers and no irrational numbers

SECTION – B

13. Find three rational numbers between 3.1415 and 3.1416.

14. Prove that $\sqrt{3}$ is an irrational number.

15. Write 4 rational & irrational numbers between

i) 3 & 4

ii) $-\frac{3}{4}$ & $\frac{1}{6}$

iii) $\frac{1}{7}$ & $\frac{2}{7}$

iv) $\sqrt{2}$ & $\sqrt{3}$

16. If $\sqrt{2}$ is an irrational number, prove that $5 - \sqrt{2}$ is an irrational number.

17. Express following numbers in the form $\frac{p}{q}$:

i) $3.\overline{16}$

ii) $2.\overline{34}$

iii) $3.12\overline{5}$

iv) $0.6 + 0.\overline{7} + 0.4\overline{3}$

18. Represent $\frac{7}{4}$ on the number line.

19. Represent $\sqrt{10}$ on the number line.

20. A rational number in its lowest form has denominator $2^3 \times 5$. How many decimal places will its decimal expansion have? Explain your answer.

21. Perform the long division for $\frac{1}{13}$. Identify the repeating block of digits. Does it show cyclic properties if you evaluate $\frac{2}{13}$?

22. Three rational numbers x, y, z satisfy $x + y + z = 0$ and $xy + yz + zx = 0$. Show that all the rational numbers x, y, z must be simultaneously zero.

23. Without performing long division, determine which of the rational numbers will have terminating decimals and which will be non-terminating & repeating decimals: Also verify by the process of long division:

i) $\frac{6}{15}$

ii) $\frac{13}{750}$

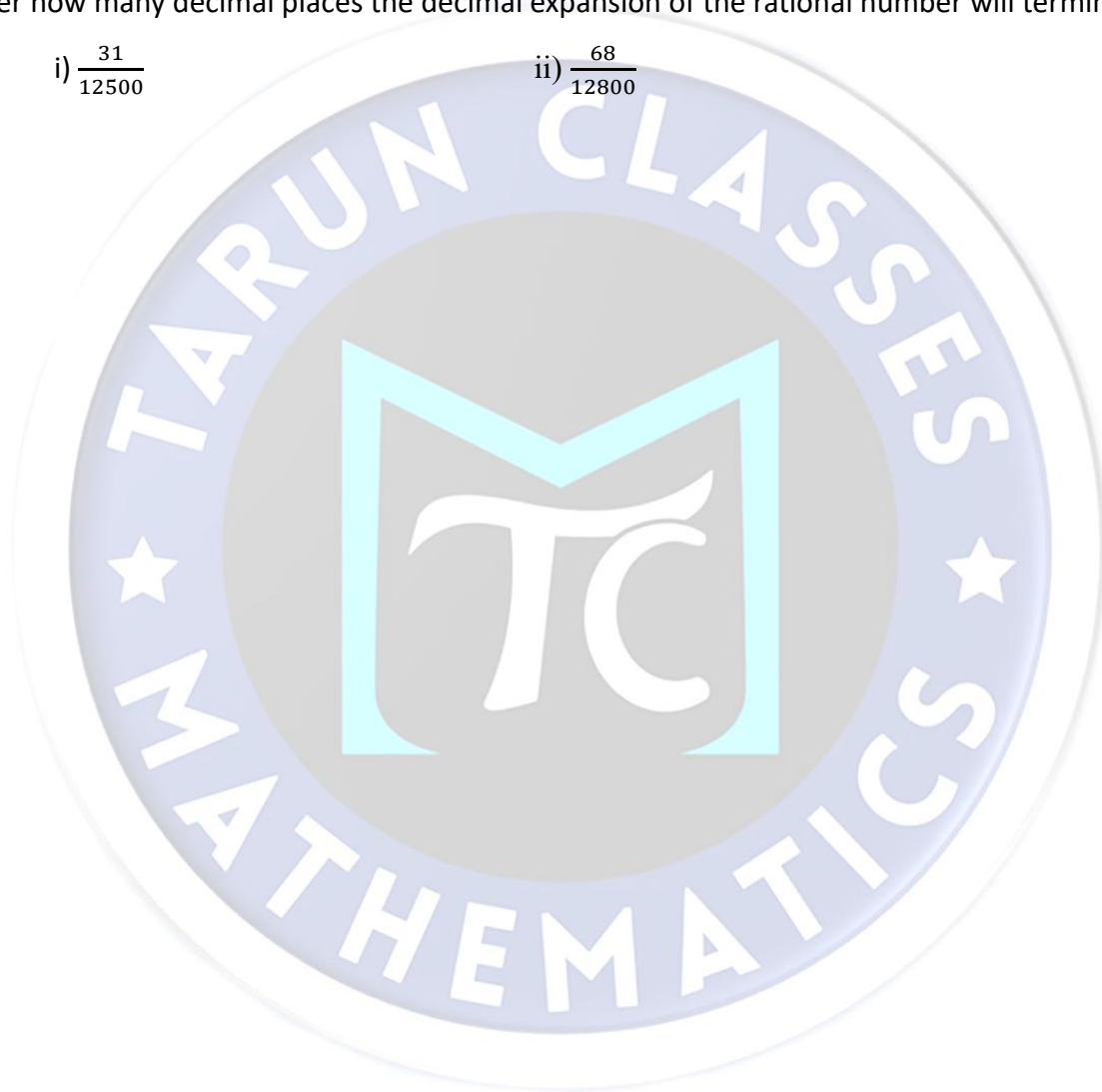
iii) $\frac{11}{20}$

iv) $\frac{18}{125}$

24. After how many decimal places the decimal expansion of the rational number will terminate.

i) $\frac{31}{12500}$

ii) $\frac{68}{12800}$



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SECTION - A (Multiple Choice Questions)

1. (b)
2. (a)
3. (c)
4. (b)
5. (b)
6. (c)
7. (c)
8. (b)
9. (d)
10. (d)
11. (b)
12. (c)

