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DPP CLASS – 7TH   **RATIONAL NUMBERS**
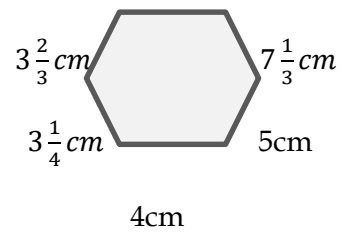
KEY POINTS –

- A Positive rational numbers - when numerator and denominator of rational number is either both positive integer and both negative integer.

- Negative rational numbers – A rational number is said to be negative if its numerator and denominator are such that one of them is positive integer and another one is a negative integer.

- The rational number 0 is neither positive nor negative.

- Standard form of Rational No is $\frac{p}{q}$. In this form p & q must be integers, where p and q have no common divisor other than 1.

SINGLE OPTION CORRECT

1. $\frac{44}{-77}$ in standard form is

   (A) $\frac{4}{-7}$ (B) $-\frac{4}{7}$ (C) $-\frac{44}{77}$ (D) None of these

2. If $-\frac{3}{7} = \frac{x}{35}$, then x =

   (A) 15   (B) 21   (C) - 15   (D) - 21

3. What is the multiplicative identity element in the set of whole numbers?

   (A) 1   (B) 0   (C) - 1   (D) None of these

4. What is the additive identity element in the set of whole numbers?

   (A) 1   (B) 0   (C) - 1   (D) None of these

5. Write 2 more rational numbers to complete the pattern $-\frac{1}{3}, -\frac{2}{6}, -\frac{3}{9}, \ldots\ldots$

   (A) $-\frac{4}{12}, -\frac{5}{15}$ (B) $\frac{4}{12}, -\frac{5}{15}$ (C) $\frac{4}{12}, \frac{5}{15}$ (D) $\frac{4}{-12}, \frac{5}{15}$

6. Add $\frac{8}{-15}, \frac{4}{-3}$

   (A) $-\frac{28}{15}$ (B) $\frac{28}{15}$ (C) $-\frac{28}{-15}$ (D) None of these

7. Subtract $-\frac{3}{5}$ from $\frac{9}{10}$

(A) $\frac{3}{5}$ (B) $\frac{3}{2}$ (C) $-\frac{3}{2}$ (D) $-\frac{3}{5}$

8. Find $-\frac{16}{21}$ by $\frac{4}{3}$

(A) $-\frac{4}{7}$ (B) $-\frac{64}{63}$ (C) $\frac{4}{7}$ (D) $\frac{4}{-7}$

9. A water bottle contains 2 liter of water. Menu drank $\frac{1}{8}$ of water. How much water menu drink in liter?

(A) $\frac{1}{2}$ (B) $\frac{1}{4}$ (C) $\frac{1}{8}$ (D) $\frac{1}{3}$

10. If $\frac{x}{2} + \frac{1}{3} = 1$, then x =

(A) $-\frac{4}{3}$ (B) $\frac{4}{3}$ (C) $\frac{3}{4}$ (D) $-\frac{3}{4}$

11. If the product of two on zero rational numbers is 1, then they are

(A) Additive inverse of each other   (B) Multiplicative inverse of each other

(C) Reciprocal of each other   (D) Both B and C

12. How many rational number between two rational numbers

(A) 1   (B) 0   (C) unlimited   (D) 100

13. To reduce a rational number to its standard form, we divide its numerator and denominator by their

(A) Multiple   (B) HCF   (C) LCM   (D) Divide

14. In the standard form of a rational number, the common factor of numerator and denominator is always

(A) 0   (B) - 1   (C) 1   (D) Negative

15. What is the perimeter of the given figure? $3\frac{2}{3}cm$ $7\frac{1}{3}cm$ $3\frac{1}{4}cm$ 5cm 4cm

(A) $\frac{109}{4}$ (B) 327   (C) $24\frac{3}{4}$ (D) None of these

16. The reciprocal of $\left(\dfrac{3}{11} \times \dfrac{5}{6}\right) - \left(\dfrac{9}{22} \div \dfrac{3}{4}\right)$ is

(A) $\dfrac{7}{22}$ (B) $\dfrac{22}{7}$ (C) $\dfrac{22}{-7}$ (D) $\dfrac{7}{-22}$

17. What is the value of $\otimes$ figure in the equation $\dfrac{16}{7} \times \dfrac{16}{7} - \dfrac{\otimes}{7} \times \dfrac{9}{7} + \dfrac{9}{7} \times \dfrac{9}{7} = 1$?

(A) 1   (B) 7   (C) 4.57   (D) 32

18. Find the value of $\left(1 - \dfrac{1}{2^2}\right)\left(1 - \dfrac{1}{3^2}\right)\left(1 - \dfrac{1}{4^2}\right)\cdots\cdots\left(1 - \dfrac{1}{10^2}\right)$.

(A) $\dfrac{5}{12}$ (B) $\dfrac{1}{2}$ (C) $\dfrac{11}{20}$ (D) $\dfrac{7}{10}$

19. The expression $\left[\dfrac{1}{1\cdot 2} + \dfrac{1}{2\cdot 3} + \dfrac{1}{3\cdot 4} + \ldots + \dfrac{1}{n(n+1)}\right]$ is a natural number:

(A) always greater than 1   (B) always less than 1

(C) always equal to 0   (D) always a negative integer

20. The value of $\left\{24 \div 2 \div 6 - \overline{25 - 20} \times 2 + \left(\dfrac{4}{5} \text{ of } \overline{20 - 15}\right)\right\} + 24 - 20$ is

(A) 5   (B) 0   (C) 4   (D) None of these

MULTIPLE OPTIONS CORRECT

1. Select the true statements

   (A) The product of a whole number with rational number is always a rational number

   (B) All rational number are fraction

   (C) All fractions are rational number

   (D) If a rational number is multiplied by an integer, then it is always an integer

2. A rational number equal to - 2/3 is

   (A) - 10/15   (B) 10/- 15   (C) - 9/6   (D) None of these

3. Which of the following is correct

   (A) $\dfrac{8}{32}$ and $-\dfrac{5}{25}$ are equivalent rational number   (B) The value of $\left[\left(-\dfrac{20}{8}\right) \div \left(-\dfrac{5}{3}\right)\right]$ is 2/3

   (C) All integers are rational numbers   (D) $\dfrac{0}{1}$ is a rational number

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4. Choose the true statements.

(A) $-\dfrac{5}{8}$ lies to the left of 0 on the number line. (B) Sum of rational numbers $\dfrac{5}{3}$ & $-\dfrac{5}{3}$ is not zero

(C) The rational number $\dfrac{1}{2}$ and $-\dfrac{1}{2}$ are on opposite sides of 0 on the number line

(D) None of these

5. Select the correct statements.

(A) A number has to be multiplied with 64 to get result $-49\dfrac{3}{5}$ is = $-\dfrac{31}{40}$

(B) Additive inverse of $-\dfrac{5}{9}+\dfrac{1}{3}$ is = 2/9 (C) $\dfrac{7}{-18}+\dfrac{-5}{12}+\dfrac{-9}{-16}$ is = $-\dfrac{35}{144}$

(D) None of these

6. Ascending orders are

(A) $-\dfrac{4}{3},-\dfrac{1}{3},-\dfrac{2}{9}$ (B) $-\dfrac{2}{3},\dfrac{4}{-9},-\dfrac{5}{12},\dfrac{7}{-18}$ (C) $\dfrac{7}{-18},-\dfrac{5}{12},\dfrac{4}{-9},-\dfrac{2}{3}$ (D) $-\dfrac{2}{9},\dfrac{5}{2},\dfrac{3}{4}$

7. Which of the following are rational numbers?

(A) $\dfrac{22}{39}$ (B) $\dfrac{73}{0}$ (C) 281 (D) $8\dfrac{1}{3}$
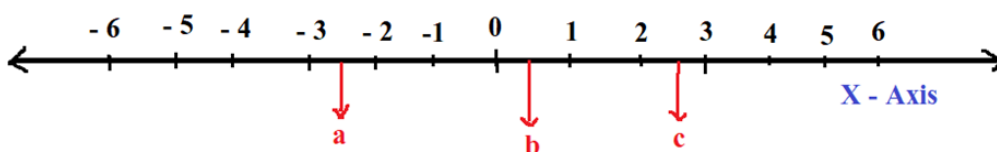
8. Find the true statements

(A) $-\dfrac{6}{11}>-\dfrac{11}{20}$ (B) $-\dfrac{3}{7}<-\dfrac{4}{10}$ (C) $\dfrac{4}{8}=\dfrac{5}{10}$ (D) None of these

9. Consider the Number Line to select the correct answers.

(A) - 6 < a < 0 < c (B) 0 < b < |a| < c

(C) - 3 < 1 < |a| (D) a × b < c

10. True statements is/are

(A) If $\left(\dfrac{1}{3}+\dfrac{1}{4}-\dfrac{1}{5}\right)+x=4$, then x = $3\dfrac{37}{60}$ (B) Reciprocal of $\dfrac{1}{3}\times\left(-\dfrac{9}{4}\right)=-\dfrac{4}{3}$

(C) Absolute value of $\left|-\dfrac{4}{11}\right|=\dfrac{4}{11}$ (D) Absolute value of $\left|\dfrac{3}{10}\right|=-\dfrac{3}{10}$

SUBJECTIVE PROBLEMS

1. Represent the following rational number on the number line.

   (i) $-\dfrac{4}{7}$ (ii) $\dfrac{-7}{-8}$ (iii) $\dfrac{1}{-4}$ (iv) $\dfrac{3}{6}$

2. Insert 5 rational numbers between $-\dfrac{2}{3}$ and - 1.

3. A stairway consists of 14 stairs, each $32\dfrac{5}{7}$ cm high. What is the vertical height of the stairways?

4. An area of a room is $\dfrac{261}{4}$ m². If its breadth is $\dfrac{87}{16}$ m, what is its length?

5. Sukriti spends $\left(\dfrac{3}{5}\right)^{th}$ of her income on household articles and $\left(\dfrac{1}{7}\right)^{th}$ of her income for personal expense. If her monthly income is ₹70,000, then her monthly saving is?

6. Simplify: $\left[\left(-\dfrac{3}{2}\times\dfrac{4}{5}\right)\div\left(\dfrac{9}{5}\times-\dfrac{10}{3}\right)-\left(\dfrac{1}{2}\times\dfrac{3}{4}\right)\right]\times[\left(\dfrac{21}{9}\times\dfrac{3}{7}\right)-\left(\dfrac{7}{8}\times\dfrac{16}{14}\right)]$

7. In an examination, a student was asked to find $\dfrac{5}{17}$ of a certain number. By mistake he found $\dfrac{17}{5}$ of that 264 number. If his answer was $\dfrac{264}{119}$ more than the correct answer, find the number.

8. If P = 14 - 25 {15 - $\overline{33-18}$} and Q = [7 { 15 + (-27) ÷ (3) }] then the value of $\dfrac{P+Q}{P-Q}$

9. If A = 13 [12 + {32 × 5 + (32 - 12 ÷ 3)}] and B = 13 { -15 + (13) × 4}, then A ÷ B is equal to?

10. Express $15.7\overline{12}$ in the form of $\dfrac{p}{q}$.

11. A bus is moving at an average speed of $50\dfrac{2}{5}$ km/h. how much distance will it cover in $2\dfrac{1}{2}$ h?

12. Find the terminating or nonterminating repeating decimal representation?

    (i) $\dfrac{23}{50}$ (without actual division)   (ii) $\dfrac{2}{11}$

13. Sheena walks $\dfrac{5}{6}$ km from a place P towards east and then from there $1\dfrac{3}{8}$ km towards west. Where will be she now from P?

14. If we divide $\dfrac{3}{5}$ by $\dfrac{4}{9}$ and multiply the result by $-\dfrac{2}{9}+\dfrac{1}{3}$, then we get $\dfrac{k}{20}$. Find the value of K?

15. What should be added to $(\dfrac{1}{-2}-\dfrac{3}{4}of-\dfrac{8}{15})$ so that the sum is the product of $-\dfrac{7}{50}$ and $1\dfrac{1}{14}$.

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THANKS!

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ANSWER KEY & SOLUTION

SINGLE OPTION CORRECT

1. B	2. C	3. A	4. B
5. A	6. A	7. B	8. A
9. B	10. B	11. D	12. C
13. B	14. C	15. C	16.
17.	18.	19.	20. B

MULTI OPTIONS CORRECT

1. A, C	2. A, B	3. C, D	4. A, C
5. A, B, C	6. A, B	7. A, C, D	8. A, B, C
9. A, C, D	10. A, B, C		

SUBJECTIVE

1. -	2. Any 5 Rational No.	3. 448 cm	4. 4.12 m
5. ₹ 18,000	6. 0	7. 5/7	8. - 2
9. $5\frac{15}{37}$	10. -	11. 126 km	
12. (i) Terminating	(ii) 0.18181..	13. 13/24 km towards the west	
14. 3	15. -1/20		