



Brain International School

Vikas Puri, New Delhi

ASSIGNMENT NO. 1

SUBJECT: MATHEMATICS

CLASS-VIII

APRIL, 2025

RATIONAL NUMBERS

Tick the correct answer:

Q1. What should be added to $-\frac{5}{4}$ to get -1?

- (i) $-\frac{1}{4}$ (ii) $\frac{1}{4}$ (iii) 1 (iv) $-\frac{3}{4}$

Q2. Which of the following is the additive identity for rational numbers?

- (i) 1 (ii) -1 (iii) 0 (iv) 2

Q3. Which of the following is the Multiplicative identity for rational numbers?

- (i) 1 (ii) -1 (iii) 0 (iv) -2

Q4. Which of the following is neither a positive nor a negative rational number?

- (i) 1 (ii) 0 (iii) 2 (iv) -2

Q5. **Assertion:** Zero is a rational number.

Reason: Each rational number is a quotient of any two integers, while its divisor should not be zero.

Thus, a number of the form $\frac{p}{q}$ where p and q are integers and $q \neq 0$ is a rational number.

- (a) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
(b) Both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
(c) Assertion is correct but Reason is incorrect.
(d) Assertion is incorrect but Reason is correct.

Q6. Find the product of the additive and multiplicative inverse of $-\frac{5}{8}$.

Q7. If $a = \frac{1}{2}$, $b = -\frac{3}{4}$, verify $a + b = b + a$. Also mention the name of the property used.

Q8. Let a , b , c be the three rational numbers where $a = \frac{2}{3}$, $b = \frac{4}{5}$ and $c = -\frac{5}{6}$

Verify:

(i) $a + (b + c) = (a + b) + c$ (Associative property of addition)

Q9. Simplify:

$$\left(\frac{13}{3} \times -\frac{5}{2}\right) + \left(-\frac{3}{2} \times -\frac{1}{5}\right) + \left(\frac{7}{6} \times -\frac{16}{5}\right)$$

CASE STUDY BASED QUESTION

Q10. Aditya is working in a multinational company earns ₹1,50,000 per month. Out of his earnings he spends $\frac{1}{10}$ th on food items, $\frac{1}{4}$ th on shopping with family, $\frac{1}{5}$ th of remaining on education of his two kids and rest of his money he puts in his savings.

On basis of this information given in passage answer the following questions:

- How much money he spends on food items?
- How much money he spends on shopping?
- How much money was left with him after spending on food and shopping?
- Calculate the amount spend by Aditya on education of children?
- How much money he saved?

LINEAR EQUATIONS IN ONE VARIABLE

Tick the correct answer:

Q1 In the equation $3x = 4 - x$, transposing $(-x)$ to LHS we get

- (a) $3x - x = 4$ (b) $3x + x = 4$ (c) $-3x + x = 4$ (d) $-3x - x = 4$

Q2. The solution of $3x = 2x + 18$ is:

- (a) $\frac{5}{18}$ (b) 18 (c) $\frac{18}{5}$ (d) 1

Q3. If $\frac{n}{11} = 10$, then $n = \frac{11}{10}$.

- (a) True (b) False

Q4. **Assertion (A)** – The degree of the equation $x^2 - 2x + 1 = x^2 - 3$ is 2

Reason (R) – Standard form for linear equation in one variable is $ax+b=0$. where x is variable and a, b are arbitrary constants.

- Both A and R are true and R is the correct explanation of A
- Both A and R are true but R is not the correct explanation of A
- A is true but R is false.
- A is false but R is true.

Q5. Solve the equation:

- $3x + 1 = -5x$
- $\frac{x-1}{2} + \frac{x+1}{3} = 1$
- $2m + 5 = m + 25$
- $\frac{5x+1}{3} - \frac{1}{2} = \frac{3x-2}{4}$
- $\frac{3y+5}{5} - \frac{5y-7}{6} = \frac{y-2}{3}$

Q6 The present ages of Sheela and Sunita are in the ratio 5:4. Eight years from now, their ages will be in the ratio 6:5. Find their present ages.

Q7 The angles of a triangle are in the ratio 5:6:7. Find the angles of the triangle.

CASE STUDY BASED QUESTION

Q8 It is common that government revises fares from time to time based on various factors such as taxes, economy and inflation for various vehicles. The auto charge and taxi charge are fixed for the distance covered.

Based on the given information, answer the following questions:

- a) If the fixed charge in a city is ₹ x and charge per km is ₹5 and the total fare is ₹60 then find the linear equation for the journey of 10 km.
- b) Find the value of fixed charge.

