5

Rational Numbers

Q1. Find which of the following is a rational number but not a fraction. Tick(✓) or Cross (×) in the columns given below:

Number	Rational Number	Fraction
$\frac{2}{3}$		
$\frac{1}{5}$		
$\frac{2}{-9}$		
$\frac{2}{0}$		

Q2. Fill in the blanks:

a. If both the numerator and denominator is a negative integer the rational number is positive.

_____

b. There are infinite positive and negative rational numbers between 0 and 1.

_____

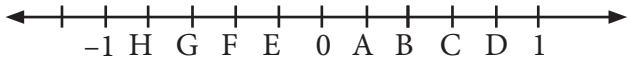
c. $\frac{-3}{-4}$ will lie on the left of 0 on the number line.

_____

Q3. Tick the pair that has the same standard form:

a. $\frac{-4}{5}, \frac{-14}{15}$ b. $\frac{-3}{15}, \frac{1}{5}$ c. $\frac{-23}{46}, \frac{-1}{2}$

Q4. Name the points that represent the following rational numbers on the given number line:



a. $\frac{1}{5}$: _____

b. $-\frac{3}{5}$: _____

c. $\frac{4}{5}$: _____

Q5. Express each of the following in their equivalent decimal form:

a. $\frac{1}{2} + \frac{1}{4} =$ _____

b. $-\frac{7}{80} =$ _____

Q6. Fill in the blanks:

a. $\frac{7}{80} \times$ _____ $= 0$

b. $-\frac{3}{5} \times \frac{9}{71} = \frac{9}{71} \times \frac{\square}{\square}$

c. $\frac{2}{3}\left(\frac{1}{2} + \frac{4}{5}\right) = \frac{2}{3} \times \frac{1}{2} + \frac{2}{3} \times \frac{\square}{\square}$

d. $\frac{3}{32} \div \frac{7}{8} = \frac{3}{32} \times \frac{\square}{\square}$

Q7. A rational number $\frac{p}{q}$ is such that the prime factorisation of p and q is:

$p = 2 \times 2 \times 3 \times 7 \times 11$

$q = 2 \times 2 \times 2 \times 5 \times 5 \times 3$

Answer the following questions based on the given information:

a. Is $\frac{p}{q}$ in standard form? _____

b. Can $\frac{p}{q}$ be represented as a terminating decimal? _____

c. Can there be a rational number equivalent to $\frac{p}{q}$ with denominator as 150? _____

Q8. Find the missing rational number and fill in the blanks:

a. $\frac{\square}{\square} + 1 = \frac{8}{71}$

b. $-\frac{6}{11} - \frac{\square}{\square} = -1$

c. $-\frac{3}{4} - \frac{-5}{16} = \frac{\square}{\square}$

Q9. Simplify:

a. $\frac{4}{5} \times \frac{6}{7} \div \frac{14}{7} \times \frac{5}{7}$

Answer: _____

b. $\left(\frac{7}{12} \div \frac{3}{4}\right) \times \left(\frac{1}{14} \div \frac{3}{4}\right)$

Answer: _____

Q10. Shilpa bought 16 coffee mugs for ₹679. Find the cost of each mug. If Shilpa wants to buy 48 more mugs, how much more money will she have to pay?(Express the answer in mixed fraction, if required)

Answer:

a. Cost of 1 coffee mug = _____

b. Amount that Shilpa has to pay = _____

Answers

1.

Number	Rational Number	Fraction
$\frac{2}{3}$	✓	✓
$\frac{1}{5}$	✓	✓
$\frac{2}{-9}$	✓	×
$\frac{2}{0}$	×	×

2. a. True; b. True; c. False

3. (c)

4. a. Point A; b. Point G; c. Point D

5. a. 0.75; b. –0.0875

6. a. 0; b. $-\frac{3}{5}$; c. $\frac{4}{5}$; d. $\frac{8}{7}$

7. a. No; b. Yes; c. Yes

8. a. $-\frac{63}{71}$; b. $\frac{5}{11}$; c. $-\frac{7}{16}$

9. a. $\frac{12}{49}$; b. $\frac{23}{36}$

10. a. ₹$42\frac{7}{16}$; b. ₹2037