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Representation of the Rational Numbers

A **fraction** is any number of the form $\frac{a}{b}$ where both "a" and "b" are whole numbers and $b \neq 0$.

- A **rational number** is a number that is in the form of $\frac{p}{q}$ where both "p" and "q" are integers and $q \neq 0$.
- An **irrational number** is a number that cannot be expressed in the form of $\frac{p}{q}$, where p and q are integers, $q \neq 0$.
- **Positive rational numbers**: A rational number is said to be positive when the numerator and the denominator are both either positive or negative.
  For example, $\frac{1}{2}, \frac{2}{5}, \frac{-1}{-2}, \frac{-3}{-13}, \ldots$
- **Negative rational numbers**: A rational number is said to be positive if its numerator and denominator have opposite signs.
  For example, $\frac{-1}{2}, \frac{-2}{5}, \frac{3}{-5}, \frac{7}{-11}, \ldots$

1. *Which of the following statements is true for a rational number* $\frac{a}{b}$

   a) The numerator 'a' cannot be 1

   b) The denominator 'b' can be a decimal number

   c) The denominator 'b' cannot be a prime number

   d) The denominator 'b' cannot be **0**

2. *Choose all the correct options: A rational number is represented in the form of*

   a) decimals *b) fractions* *c)* $\frac{a}{b}$ *d) integers*

3. *To plot the positive rational numbers on the number line, we move towards _ _____ of the* **0**

   a) up *b) left* *c) right* *d) down*

4. *To plot the* $\frac{1}{5}$ *on the number line, how many total divisions should be shown on the number line between* **0** *and* **1**? *a) 7* *b) - 5* *c) 5* *d) 2*

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5. *If numerator and denominator have opposite signs, then the given rational number is*

a) positive b) negative c) **0** d) unknown

6. *Interpret :*

A. The quotient of two integers is always a rational number

B. $\frac{1}{0}$ *is not a rational number*

a) Both A and B are true

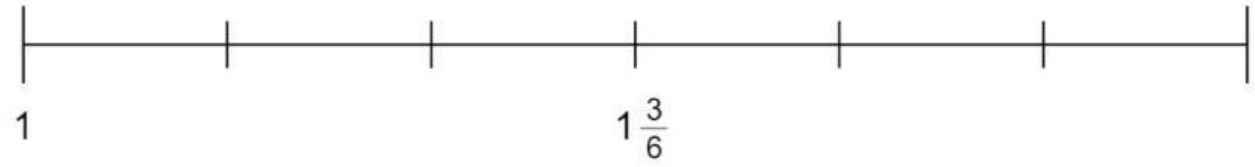
b) Both A and B are false

c) A is true and B is false

d) A is false and B is true

7. *Represent the rational numbers (fractions) on the number line*

$1\frac{5}{6}$, $1\frac{2}{6}$, 2 , $1\frac{1}{6}$, $1\frac{4}{6}$



8. *Represent the rational numbers (decimals) on the number line*

0.4 , 0.1 , 0.5 , 0.2 , 0.7 , 0.9 , 0.3 , 0.6