Worksheet 1

1. Using appropriate properties find :

(i) $-\dfrac{1}{2} \times \dfrac{3}{5} + \dfrac{3}{2} - \dfrac{3}{5} \times \dfrac{5}{4}$

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(ii) $\dfrac{4}{7} \times \left(-\dfrac{1}{5}\right) + \dfrac{2}{7} \times \dfrac{3}{5} - \dfrac{3}{2} \times \dfrac{4}{7}$

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(iii) $\dfrac{1}{5} \times \left(-\dfrac{3}{2}\right) + \dfrac{4}{5} \times \left(-\dfrac{2}{7}\right) - \dfrac{1}{6} \times \left(-\dfrac{2}{7}\right)$

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2. Write the additive inverse of :

(i) $\dfrac{5}{7}$ _____

(ii) $\dfrac{-4}{11}$ _____

(iii) $\dfrac{11}{-15}$ _____

(iv) $\dfrac{2}{-13}$ _____

(v) $\dfrac{-16}{7}$ _____

(vi) $\dfrac{21}{-9}$ _____

Worksheet 2

1. Write the multiplicative inverse of :

(i) $\dfrac{-4}{7}$ _____

(ii) $\dfrac{21}{5}$ _____

(iii) $\dfrac{9}{-11}$ _____

(iv) $\dfrac{5}{6} \times \left(\dfrac{-3}{8}\right)$ _____

(v) $-7 \times \dfrac{5}{14}$ _____

2. Name the property used :

(i) $\dfrac{2}{5} \times \left(-\dfrac{1}{2}\right) = -\dfrac{1}{5}$, which is a rational number _____

(ii) $\dfrac{-4}{9} \times 1 = \dfrac{-4}{9} = 1 \times \left(-\dfrac{4}{9}\right)$ _____

(iii) $\dfrac{5}{12} \times \left(-\dfrac{1}{7}\right) = -\dfrac{1}{7} \times \dfrac{5}{12}$ _____

(iv) $7 \times \dfrac{1}{7} = \dfrac{1}{7} \times 7 = 1$ _____

(v) $\left[\dfrac{4}{5} \times \left(-\dfrac{3}{5}\right)\right] \times \dfrac{1}{2} = \dfrac{4}{5} \times \left[\left(-\dfrac{3}{5}\right) \times \dfrac{1}{2}\right]$ _____

(vi) $\dfrac{1}{2} \times \left[\dfrac{1}{5} + \left(-\dfrac{1}{7}\right)\right] = \dfrac{1}{2} \times \dfrac{1}{5} + \dfrac{1}{2} \times \left(-\dfrac{1}{7}\right)$ _____

3. For $x = -\dfrac{13}{25}$, verify that $(-x) = x$.

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Worksheet 3

1. How many rational numbers are there whose reciprocals do not exist?

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2. Multiply $\dfrac{2}{15}$ by the reciprocal of $\dfrac{7}{5}$.

_____

3. Divide -1 by the reciprocal of $\dfrac{5}{-11}$.

_____

4. Write the rational number which is equal to its additive inverse.

_____

5. Write all the rational numbers that are equal to their reciprocals.

_____

6. If we exclude 0, then the collection of all other rational numbers is closed under division. Is it true?

_____

7. Is subtraction associative for rational numbers?

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8. Negative of the negative of a rational number is the number itself. Is it true?

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9. The reciprocal of a positive rational number is _____ and the reciprocal of a negative rational number is _____.

Worksheet 4

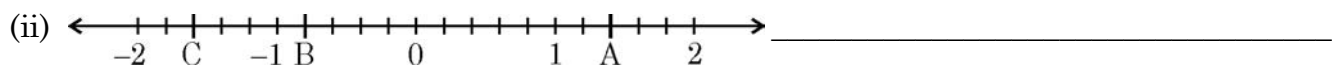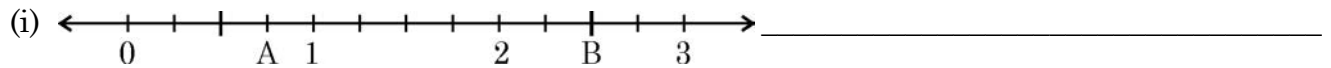1. **Represent the following rational numbers on the number line.**

   (i) $\dfrac{1}{4}$

   (ii) $\dfrac{12}{5}$

   (iii) $-\dfrac{5}{8}$

   (iv) $-\dfrac{11}{3}$

2. **Write the rational number for each point labelled with a letter.**

   (i) _____

   (ii) _____

3. **List the integers which lie between −2 and 2.**

   _____

4. **How many rational numbers are there between −2 and 2?**

   _____

5. **Write 3 rational numbers between $\dfrac{1}{3}$ and $\dfrac{1}{2}$.**

   _____

   _____

Worksheet 5

1. Find 5 rational numbers between -3 and -2.

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2. Find 10 rational numbers between $-\dfrac{4}{5}$ and $-\dfrac{3}{5}$

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3. If x and y are two rational numbers, then _____ is a rational number between x and y.

4. Write 4 rational numbers greater than $-\dfrac{1}{5}$.

_____

5. Find 6 rational numbers between -8 and -7.

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6. Find 10 rational numbers between $-\dfrac{1}{3}$ and 3.

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