

Class- VIII

SUBJECT – MATHEMATICS

WORKSHEET – Rational Numbers

SESSION – 201 . -1

Q.1. Simplify:

a)  $\left(-\frac{3}{2} * \frac{4}{5}\right) + \left(\frac{9}{5} * \left(-\frac{10}{3}\right)\right) - \left(\frac{1}{2} * \frac{3}{4}\right)$

b)  $\frac{\frac{7}{8}}{\frac{3}{5}}$

c)  $\frac{\frac{7}{18}}{4}$

d)  $-\frac{7}{8} + \left(-\frac{9}{10}\right)$

e)  $-\frac{5}{8} - \left(-\frac{5}{12}\right)$

f)  $7\frac{3}{4} - 4\frac{3}{5}$

Q.2. Find three rational numbers between \_\_\_\_\_

a)  $-6$  and  $\frac{4}{5}$

b)  $-\frac{1}{2}$  and  $-\frac{3}{4}$

Q.3. If the product of two rational numbers is  $\frac{25}{42}$  and one of them is  $-\frac{26}{7}$ , find the other.

Q.4. What number should be added to  $-\frac{4}{11}$  to get  $-\frac{3}{8}$  ?

Q.5. 7 times the reciprocal of a number plus  $\frac{2}{3}$  is 3. Find the number.

Q.6. The additive inverse of a number divided by 12 is the same as one less than three times its reciprocal. Find the number.

Q.7. If  $p = -\frac{4}{9}$ ,  $q = \frac{2}{3}$ ,  $r = -\frac{8}{11}$ , verify the following:

a)  $p + (q + r) = (p + q) + r$

b)  $p * q = q * p$

c)  $p * (q + r) = (p * q) + (p * r)$

(d)  $(p + q) \div r = (p \div r) + (q \div r)$

Q.8. Represent the following numbers on number line :

a)  $-\frac{5}{6}$

b)  $-9/7$

c)  $7/4$

### Very short answer type Questions

Q.9. What is the sum of a rational number and its additive inverse?

Q.10. Multiplication of a non-zero rational number and its reciprocal is \_\_\_\_\_

Q.11.  $0 \div \frac{2}{3} =$  \_\_\_\_\_

Q.12.  $\frac{2}{3} \div 0 =$  \_\_\_\_\_

Q.13. Reciprocal of a negative number is \_\_\_\_\_

Q.14

Q.15. Name the property illustrated through each of them:

a)  $-\frac{6}{7} * \frac{9}{11} = \frac{9}{11} * \left(-\frac{6}{7}\right)$

b)  $\left(\frac{5}{8} + \left(-\frac{4}{9}\right)\right) * \frac{3}{4} = \left(\frac{5}{8} * \frac{3}{4}\right) + \left(-\frac{4}{9} * \frac{3}{4}\right)$

c)  $\left(\frac{8}{13} * \frac{13}{15}\right) * \left(-\frac{7}{12}\right) = \frac{8}{13} * \left(\frac{13}{15} * \left(-\frac{7}{12}\right)\right)$

d)  $\frac{1}{7} * \frac{3}{2} = \frac{3}{14}$  is a rational number

e)  $-\frac{4}{7} + \frac{5}{21} = \frac{5}{21} + \left(-\frac{4}{7}\right)$

Q.16. State whether following statement are True or False:

- a) Every integer is a rational number .
- b) Zero has its multiplicative inverse .
- c) Division of two rational numbers is always closed .
- d) Rational numbers are associative under subtraction .
- e) Rational numbers are closed under subtraction .
- f) Zero is the identity for addition of rational numbers .

### Answers

Q.1. a)  $-\frac{93}{40}$    b)  $\frac{35}{24}$    c)  $\frac{7}{72}$    d)  $-\frac{71}{40}$    e)  $-\frac{5}{24}$    f)  $\frac{63}{20}$

Q.2. a)  $-\frac{29}{5}, -\frac{28}{5}, -\frac{27}{5}$    b)  $-\frac{9}{16}, -\frac{10}{16}, -\frac{11}{16}$    Q.3.  $-\frac{5}{24}$    Q.4.  $-\frac{1}{88}$

Q.5.  $\frac{7}{3}$    Q.9. 0   Q.10. 1   Q.11. 0   Q.12. Not defined   Q.13. negative

Q.14. 1   Q.15. a) Commutative property   b) Distributive property

c) Associative property   d) Closure property   e) Commutative property

Q.16. a) True   b) False   c) False   d) False   e) True   f) True

