PRACTICE WORKSHEET

Subject: Mathematics **Class:** ICSE 8th

Chapter: Rational Numbers **Worksheet:** M-1

TYPE/TOPIC OF QUESTIONS: COMPARISON OF RATIONAL NUMBERS

1. Arrange the following rational number ascending order:
   (i) 2/3, 5/7, (-4)/(-9), 1/4
   (ii) 4/(-9), (-5)/12, 7/(-18), (-2)/3
   (iii) 3/5, (-17)/(-30), 8/(-15), (-7)/10
2. Which of the two rational numbers in each of the following pairs of rational numbers is greater?
   (i) 3/8 or 0 (ii) (-3)/8 or 0 (iii) (-2)/9 or 0
   (iv) 2/5 or 0 (v) (-3)/4 or ¼ (vi) (-4)/11 or 3/11

TYPE/TOPIC OF QUESTIONS: REPRESENTATION OF RATIONAL NUMBERS ON A NUMBER LINE

3. Represent each of the following negative rational numbers on the number line:
   (i) (-5)/8 (ii) (-3)/16 (iii) (-1)/3 (iv) -3/4
   (v) (-7)/3 (vi) $-4\frac{3}{5}$ (vii) $-3\frac{1}{7}$ (viii) $-1\frac{2}{3}$

TYPE/TOPIC OF QUESTIONS: PROPERTIES OF ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION OF RATIONAL NUMBERS

4. Using appropriate properties of rational numbers find:
   (i) $-\frac{2}{3}\times\frac{3}{5}+\frac{5}{2}-\frac{3}{5}\times\frac{1}{6}$ (ii) $\frac{2}{5}\times\left(-\frac{3}{7}\right)-\frac{1}{6}\times\frac{3}{2}+\frac{1}{14}\times\frac{2}{5}$
5. Write the additive inverse of each of the following.
   (i) $\frac{2}{8}$ (ii) $\frac{-5}{9}$ (iii) $\frac{-6}{-5}$ (iv) $\frac{2}{-9}$ (v) $\frac{19}{-6}$
6. Verify that – (– x) = x for.
   (i) $x=\frac{11}{15}$ (ii) $x=-\frac{13}{17}$
7. Find the multiplicative inverse of the following.
   (i) – 13 (ii) $\frac{-13}{19}$ (iii) $\frac{1}{5}$ (iv) $\frac{-5}{8}\times\frac{-3}{7}$
8. Name the property under multiplication used in each of the following.
   (i) $\frac{-4}{5}\times 1=1\times\frac{-4}{5}=-\frac{4}{5}$ (ii) $-\frac{13}{17}\times\frac{-2}{7}=\frac{-2}{7}\times\frac{-13}{17}$
   (iii) $\frac{-19}{29}\times\frac{29}{-19}=1$
9. Write.
   (i) The rational number that does not have a reciprocal.
   (ii) The rational numbers that are equal to their reciprocals.
   (iii) The rational number that is equal to its negative.
10. Fill in the blanks.
    (i) Zero has _____ reciprocal.
    (ii) The numbers _____ and _____ are their own reciprocals
    (iii) The reciprocal of – 5 is _____.
    (iv) Reciprocal of 1/x, where x ≠ 0 is _____.
    (v) The product of two rational numbers is always a _____.
    (vi) The reciprocal of a positive rational number is _____.

TYPE/TOPIC OF QUESTIONS: OPERATIONS ON RATIONAL NUMBERS

11. Simplify the rational expressions:
    (i) $(3/2 \times 1/6) + (5/3 \times 7/2) - (13/8 \times 4/3)$
    (ii) $(1/4 \times 2/7) - (5/14 \times -2/3) + (3/7 \times 9/2)$
    (iii) $(13/9 \times -15/2) + (7/3 \times 8/5) + (3/5 \times ½)$
    (iv) $(3/11 \times 5/6) - (9/12 \times 4/3) + (5/13 \times 6/15)$
12. Find the value and express as a rational number in standard form:
    (i) $2/5 \div 26/15$ (ii) $10/3 \div (-35/12)$
13. Divide the sum of -13/5 and 12/7 by the product of -31/7 and -1/2.
14. Divide the sum of 65/12 and 8/3 by their difference.

TYPE/TOPIC OF QUESTIONS: FINDING RATIONAL NUMBERS BETWEEN TWO RATIONAL NUMBERS

15. Find out a rational numbers lying between 1/4 and 1/3.
16. Find out a rational number lying between 2 and 3.
17. Find out a rational number lying between -1/3 and 1/2.
18. Find out two rational numbers lying between -3 and -2.
19. Find out six rational numbers lying between -4/8 and 3/8.
20. Find out ten rational numbers lying between 7/13 and -4/13.

TYPE/TOPIC OF QUESTIONS: WORD PROBLEMS

21. The cost of 2 1/3 meters of rope is $75 1/4. Find cost of cloth per meter.
22. If 24 trousers of equal size can be prepared in 54 meters of cloth, what length of the cloth is required for each trouser?
23. From a rope 11 m long, two pieces of lengths 13/5 m and 33/10 m are cut off. What is the length of the remaining rope?
24. A drum full of rice weighs 241/6 kg. If the empty drum weighs 55/4 kg, find the weight of rice in the drum.