Worksheet

1. Express $\frac{5}{12}$ as a rational number with
   a. numerator 15
   b. denominator 48
   c. numerator –25
   d. denominator –96

2. For what value of k each of the following pairs represents a pair of equivalent rational number?
   a. $\frac{3}{5}$ and $\frac{12}{k}$
   b. $\frac{-2}{9}$ and $\frac{k}{45}$
   c. $\frac{-16}{5}$ and $\frac{k}{-25}$
   d. $\frac{6}{14}$ and $\frac{9}{k}$

3. Write three rational numbers between $\frac{3}{7}$ and $\frac{4}{7}$. How many rational numbers can be determined between these two numbers?

4. Express each of the following in the decimal form.
   a. $\frac{1}{2}$
   b. $\frac{3}{8}$
   c. $\frac{3}{7}$
   d. $\frac{5}{12}$

5. Write the following decimals in the form of a rational number:
   a. 0.5
   b. 0.125
   c. 1.35
   d. 3.5625

6. If the number $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16}$ is expressed as a decimal, will it be terminating or non-terminating?

7. If the number $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5}$ is expressed as a decimal, will it be terminating or non-terminating?

8. Simplify:
   a. $\frac{4}{17} + \frac{-3}{34} + \frac{2}{51}$
   b. $1 + \frac{1}{2} + \frac{2}{3} + \frac{3}{4} + \frac{4}{5}$

9. Find the product of 4.01 and 2.3. Express the answer as a rational number.

10. The sum of two rational numbers is $\frac{7}{11}$. If one number is $\frac{7}{15}$, find the other.

11. Amit goes to office by car and uses an average of 36 litres of fuel in a month. Fuel costs ₹ 62.15 per litre. He decides to go by public transport next month and spends ₹ 12.50 per day. If there are 24 working days in that month, how much money did he save?

12. Classify the following as true of false:
    a. If $\frac{a}{b}$ is a rational number such that $a < b$, then $\frac{a}{b}$ is always less than 1.
    b. Every rational number can be represented on the number line.
    c. A rational number $\frac{a}{b}$ is positive if a and b are of opposite signs.
    d. Reciprocal of –1 is 1.
    e. Reciprocal of zero is zero.
    f. Zero is a rational number.

Answers to Worksheet

1.   a. $\dfrac{15}{36}$ b. $\dfrac{20}{48}$ c. $\dfrac{-25}{-60}$ d. $\dfrac{-40}{-96}$

2.   a. 20   b. −10   c. 80   d. 21

3. $\dfrac{1}{2}, \dfrac{13}{28}, \dfrac{15}{28}$ Infinite. (Variable answers)

4.   a. 0.5   b. 0.375   c. $0.\overline{428571}$ d. $0.41\overline{6}$

5.   a. $\dfrac{1}{2}$ b. $\dfrac{1}{8}$ c. $\dfrac{27}{20}$ d. $\dfrac{57}{16}$

6.   0.9375, terminating   7. $1.28\overline{3}$, non-terminating

8.   a. $\dfrac{19}{102}$ b. $\dfrac{223}{60}$ or $3.71\overline{6}$ 9. $9.223, \dfrac{9223}{1000}$

10. $\dfrac{28}{165}$ 11. ₹ 1937.40

12.   a. F   b. T   c. F   d. F   e. F   f. T