EXERCISE 2.3 **PAGE NO: 2.24**

1. Find the reciprocal of each of the following fractions and classify them as proper, improper and whole numbers:
(i) (3/7)
(ii) (5/8)
(iii) (9/7)
(iv) (6/5)
(v) (12/7)
(vi) (1/8)

Solution:
(i) Given (3/7)
Reciprocal of (3/7) is (7/3)
(7/3) is improper fraction

(ii) Given (5/8)
Reciprocal of (5/8) is (8/5)
It is improper fraction

(iii) Given (9/7)
Reciprocal of (9/7) is (7/9)
It is proper fraction

(iv) Given (6/5)
Reciprocal of (6/5) is (5/6)
It is proper fraction

(v) Given (12/7)
Reciprocal of (12/7) is (7/12)
It is proper fraction

(vi) Given (1/8)
Reciprocal of (1/8) is (8/1) = 8
It is whole number

2. Divide:
(i) (3/8) by (5/9)
(ii) 3 (1/4) by (2/3)
(iii) (7/8) by 4 (1/2)
(iv) 6 (1/4) by 2 (3/5)

Solution:
(i) Given (3/8) by (5/9)
From the rule of division of fraction we know that (a/b) ÷ (c/d) = (a/b) × (d/c)
(3/8)/ (5/9) = (3/8) × (9/5)
= (3 × 9) / (8 × 5)
= (27/40)

(ii) Given 3 (1/4) by (2/3)
Converting 3 (1/4) to improper we get (13/4)
From the rule of division of fraction we know that (a/b) ÷ (c/d) = (a/b) × (d/c)
(13/4)/ (2/3) = (13/4) × (3/2)
= (13 × 3) / (4 × 2)
= (39/8)
= 4 (2/7)

(iii) Given (7/8) by 4 (1/2)
Converting 4 (1/2) to improper we get (9/2)
From the rule of division of fraction we know that (a/b) ÷ (c/d) = (a/b) × (d/c)
(7/8)/ (9/2) = (7/8) × (2/9)
= (7 × 2) / (8 × 9)
= (14/72)
= (7/36)

(iv) Given 6 (1/4) by 2 (3/5)
Converting 6 (1/4) and 2 (3/5) to improper we get (25/4) and (13/5)
From the rule of division of fraction we know that (a/b) ÷ (c/d) = (a/b) × (d/c)
(25/4)/ (13/5) = (25/4) × (5/13)
= (25 × 5) / (4 × 13)
= (75/52)
= 2 (21/52)

3. Divide:
(i) (3/8) by 4
(ii) (9/16) by 6
(iii) 9 by (3/16)
(iv) 10 by (100/3)

Solution:
(i) Given (3/8) by 4
= (3/8)/4
= (3/8 × 4)
= (3/32)

(ii) Given (9/16) by 6
= (9/16)/6
= (9/ 16 × 6)
= (9/ 96)
= (3/32)

(iii) Given 9 by (3/16)
= 9/ (3/16)
= (9 × 16)/3
= 16 × 3
= 48

(iv) Given 10 by (100/3)
= 10/ (100/3)
= (10 × 3)/100
= (3/10)

4. Simplify:
(i) (3/10) ÷ (10/3)
(ii) 4 (3/5) ÷ (4/5)
(iii) 5 (4/7) ÷ 1 (3/10)
(iv) 4 ÷ 2 (2/5)

Solution:
(i) Given (3/10) ÷ (10/3)

= (3 × 3)/ (10 × 10)
= (9/100)

(ii) Given 4 (3/5) ÷ (4/5)
First convert the given mixed fractions into improper fraction
4 (3/5) = (23/5)
(23/5) ÷ (4/5) = (23 × 5)/ (5 × 4)
= (23/4)
= 5 (3/4)

(iii) Given 5 (4/7) ÷ 1 (3/10)
First convert the given mixed fractions into improper fraction
(39/7) and (13/10)
(39/7) ÷ (13/10) = (39 × 10)/ (7 × 13)
= (390/91)
= (30/7)
= 4 (2/7)

(iv) Given 4 ÷ 2 (2/5)
First convert the given mixed fractions into improper fraction
2 (2/5) = (12/5)
4 ÷ (12/5) = (4 × 5)/12
= (20/12)
= 1 (2/3)

5. A wire of length 12 (1/2) m is cut into 10 pieces of equal length. Find the length of each piece.

Solution:
Given total length of the wire is = 12 (1/2) = (25/2) m
It is cut into 10 pieces, so length of one piece is
= (25/2)/10
= (25/20)
= (5/4)
= 1 (1/4) m

6. The length of rectangular plot of area 65 (1/3) m² is 12 (1/4) m. What is the width of

the plot?

Solution:
Given area of rectangular plot is 65 (1/3) m² = (196/3) m²
Length of the same plot is 12 (1/4) m = (49/4) m
Width of the plot is
Area = length × breadth
(196/3) = (25/2) × breadth
Breadth = (196/3)/ (25/2)
= (196 × 4)/ (49 × 3)
= (184/147)
= 5 (3/4)

7. By what number should 6 (2/9) be multiplied to get 4 (4/9)?

Solution:
Let x be the number which needs to be multiplied by 6 (2/9) = (56/9)
x × (56/9) = 4 (4/9)
x × (56/9) = (40/9)
x = (40/9) × (9/56)
x = (40/56)
x = (5/7)

8. The product of two numbers is 25 (5/6). If one of the numbers is 6 (2/3), find the other.

Solution:
Given product of two numbers is 25 (5/6) = (155/6)
One of the number is 6 (2/3) = (20/3)
Let the other number be x
(155/6) = x × (20/3)
x = (3/20) × (155/6)
x = (31/8)
x = 3 (7/8)

9. The cost of 6 (1/4) kg of apples is Rs 400. At what rate per kg are the apples being sold?

Solution:
The cost of 6 (1/4) kg = (25/4) of apples is Rs 400
Cost of apple per kg is = (25/4) /400
= (4/25) × 400
= Rs 64

10. By selling oranges at the rate of Rs 5 (1/4) per orange, a fruit-seller gets Rs 630. How many dozens of oranges does he sell?

Solution:
Given cost of 1 orange is Rs 5 (1/4) = (21/4)
He got Rs 630 by selling the oranges
Number of dozens of oranges sold by him for Rs 630 is = (4/21) × 630
= 120 apples
But we know that 1 dozen = 12
120 apples means 10 dozens

11. In mid-day meal scheme (3/10) liter of milk is given to each student of a primary school. If 30 liters of milk is distributed every day in the school, how many students are there in the school?

Solution:
Given (3/10) liter of milk is given to each student
Number of student given (3/10) liter of milk = 1
Number of students giving 1 liter of milk = (10/3)
Numbers of students giving 30 liters of milk = (10/3) × 30 = 100 students

12. In a charity show Rs 6496 were collected by selling some tickets. If the price of each ticket was Rs 50 (3/4), how many tickets were sold?

Solution:
Given amount collected by selling tickets = Rs 6496
The price of each ticket is = 50 (3/4) = (203/4)
Number of ticket bought at Rs (203/4) = 1
Number of tickets bought for Rs 6496 is = (4/203) × 6496
= 4 × 32
= 128 tickets