BOARD – ICSE	CLASS –7	TOPIC – FRACTIONS SOLVED QUESTIONS

1. Ron solved 2/7 part of an exercise while Shelly solved 4/5 of it. Who solved less? Solution:

In order to know who solved less part of the exercise, we will compare 2/7 and 4/5

LCM of denominators (i.e., 7 and 5) = $7 \times 5 = 35$

Converting each fraction in to an equivalent fraction having 35 as its denominator, we have

$2/7 = (2 \times 5)/(7 \times 5) = 10/35$ and $4/5 = (4 \times 7)/(5 \times 7) = 28/35$

Since, $10 < 28$

Therefore, $10/35 < 28/35 \Rightarrow 2/7 < 4/5$

Hence, Ron solved lesser part than Shelly.

2. Jack finished coloring a picture in 7/12 hour. Victor finished coloring the same picture in 3/4hour. Who worked longer? By what fraction was it longer?

Solution:

In order to know who worked longer, we will compare fractions 7/12 and 3/4.

LCM of 12 and 4 = 12

Converting each fraction into an equivalent fraction with 12 as denominator

$7/12 = (7 \times 1)/(12 \times 1) = 7/12$ and $3/4 = (3 \times 3)/(4 \times 3) = 9/12$

Since, $7 < 9$

Therefore, $7/12 < 9/12 \Rightarrow 7/12 < 3/4$

Thus, Victor finished coloring in longer time.

Now, 3/4 - 7/12

$= 9/12 - 7/12 \qquad = (9 - 7)/12$

$= 2/12 \qquad = 1/6$

Hence, Victor finished coloring in 1/6 hour more time than Jack.

3. Sarah purchased $3^1/_2$kg apples and $4^3/_4$ kg oranges. What is the total weight of fruits purchased by her?

Solution:

Total weight of the fruits purchased by Sarah is $3^1/_2 + 4^3/_4$ kg.

Now, $3^1/_2 + 4^3/_4$

$= 7/2 + 19/4$

$= (7 \times 2)/(2 \times 2) + (19 \times 1)/(4 \times 1)$

$= 14/4 + 19/4$

$= (14 + 19)/4 \qquad = 33/4 \qquad = 8^1/_4$

Hence, total weight is 8 1/4 kg.

4. Rachel ate 3/5 part of an apple and the remaining apple was eaten by her brother Shyla. How much part of the apple did Shyla eat? Who had the larger share? By how much?

Solution:

We have, Part of an apple eaten by Rachel = 3/5

Therefore, part of an apple eaten by Shyla = 1 - 3/5

= 5/5 – 3/5

= (5 - 3)/5

= 2/5

Clearly, 3/5 > 2/5

So, Rachel had the larger share.

Now,

3/5 – 2/5

= (3 - 2)/5

= 1/5

Therefore, Rachel had 1/5 part more than Shyla.

5. Sam wants to put a picture in a frame. The picture is $7^3/_5$ cm wide. To fit in the frame the picture cannot be more than $7^3/_{10}$ cm wide. How much the picture should be trimmed?

Solution:

Actual width of the picture = $7^3/_5$ cm = 38/5cm

Required width of the picture = $7^3/_{10}$ cm = 73/10 cm

Therefore, extra width = (38/5 – 73/10) cm

= (38 × 2)/(5 × 2) – (73 × 1)/(10 × 1) cm

= 76/10 – 73/10 cm

= (76 – 73)/10 cm

= 3/10 cm

Hence, 3/10 cm width of the picture should be trimmed.

6. Multiply the fractions:

(i) 2/9 by 4/5 (ii) 3/5 by 12 (iii) $2^1/_3$ by 2/5

Solution:

i) 2/9 by 4/5

= 2/9 × 4/5

= (2 × 4)/(9 × 5)

= 8/45

(ii) 3/5 by 12

$= 3/5 \times 12$

$= 3/5 \times 12/1$

$= (3 \times 12)/(5 \times 1)$

$= 36/5$

$= 7^1/_5$

(iii) $2^1/_3$ by $2/5$

$= 2^1/_3 \times 2/5$

$= 7/3 \times 2/5$

$= (7 \times 2)/(3 \times 5)$

$= 14/15$

7. Sugar is sold at $\$ 17^3/_4$ per kg. Find the cost of $8^1/_2$ kg of a sugar.

Solution:

Cost of 1kg of sugar $= \$ 17^3/_4 = \$ 71/4$

Therefore, cost of $8^1/_2$ kg of sugar $= \$ (71/4 \times 8^1/_2)$

$= \$ (71/4 \times 17/2)$

$= \$ (71 \times 17)/(4 \times 2)$

$= \$ (1207/8)$

$= \$ 150^7/_8$

Hence, the cost of $8^1/_2$ kg of sugar is $\$ 150^7/_8$.

8. A car runs 16 km using 1 litre of petrol car. How much distance will it cover using $2^3/_4$ litres of petrol?

Solution:

In 1 litre, car runs 16 km

Therefore, in $2^3/_4$ litres of petrol car will travel $= 2^3/_4 \times 16$ km

$= 11/4 \times 16/1$ km

$$= \frac{11}{1\cancel{4}} \times \frac{\cancel{16}^{4}}{1}$$

$= (11 \times 4)$ km

$= 44$ km

Hence, car travels 44 km in $2^3/_4$ litres of petrol.

9. Shelly has read 3/4 of a book consisting of 288 pages. How many pages are still left?

Solution:

Total number of pages in the book = 288

Number of pages read by Shelly = 3/4 of 288

$= 3/4 \times 288$

$= 3/4 \times 288/1$

$$= \frac{3}{1\cancel{4}} \times \frac{\overset{72}{\cancel{288}}}{1}$$

$= 3 \times 72 = 216$

Therefore, number of pages left = (288 - 216) = 72

9. A rectangular park is $20^3/_4$ m long and $15^1/_2$ m wide. What is the area of the park?

Solution:

Length of the park = $20^3/_4$ m = 83/4 m,

Width of the park = $15^1/_2$ m = 31/2 m

Therefore, area of the park = Length × Width

$= 83/4 \times 31/2\ m^2$

$= (83 \times 31)/(4 \times 2)\ m^2$

$= 2573/8\ m^2$

$= 321^5/_8\ m^2$

10. Find the area of a square field if its each side is $10^3/_4$ m long.

Solution:

Length of the square field = $10^3/_4$ m = 43/4 m.

Breadth of the square field = 10 3/4 m = 43/4 m.

Therefore, area of the square field = Length × Breadth

$= 43/4 \times 43/4\ m^2$

$= (43 \times 43)/(4 \times 4)\ m^2$

$= 1849/16\ m^2$

$= 115^9/_{16}\ m^2$

11. Pamela spends 3/5 of her income on household expenses and 1/7 of her income on personal expenses. If her monthly income is $ 35000, find her monthly savings.

Solution:

Pamela's total monthly income = $ 35000.

Monthly expenditure = 3/5 of $ 35000 + 1/7 of $ 35000

= $ (3/5 × 35000) + $ (1/7 × 35000)

= $ (3/5 × 35000/1) + $ (1/7 × 35000/1)

= $ (3 × 35000)/(5×1) + $ (1 × 35000)/(7 × 1)

= $ (3 × 7000) + $ (1 × 5000)

= $ 21000 + $ 5000

= $ (21000 + 5000)

= $ 26000

Therefore, monthly savings = $ (35000—26000) = $ 9000

12. A carton contains 40 boxes of nails and each box weighs $3^3/_4$ kg. How much would a carton of nails weigh?

Solution:

Weight of 1 box = $3^3/_4$ = 15/4 kg

Therefore, weight of 40 boxes = (15/4 × 40) kg

= (15/4 × 40/1) kg

= (15 × 40)/(4 × 1) kg

= 150 kg

Hence, weight of the carton is 150 kg.

13. **Find:**

(i) 3/5 of a dollar (ii) 3/4 of a year (iii) 2/3 of a day

Solution:

(i) 1 dollar = 100 cents

Therefore, 3/5 of a dollar = 3/5 of 100 cents

Now, 3/5 of 100 = 3/5 × 100

= 3/5 × 100/1

= (3 × 100)/(5 × 1)

$$= \frac{3 \times \cancel{100}^{20}}{\cancel{5} \times 1} = 60$$

$= (3 \times 20)/(1 \times 1)$

$= 60$

Therefore, 3/5 of a dollar = 60 cents.

(ii) 1 year= 12 months

Therefore, 3/4 of a year = 3/4 of 12 months

Now, 3/4 of 12 = 3/4 ×12

$= (3 \times 12)/(4 \times 1)$

$$= \frac{3 \times \overset{3}{\cancel{12}}}{\underset{1}{\cancel{4}} \times 1}$$

$= (3 \times 3)/(1 \times 1) = 9$

Therefore, 3/4 of a year = 9 months

(iii) 2/3 of a day

1 day = 24 hours

Therefore, 2/3 of a day = 2/3 of 24 hours

Now, 2/3 of 24

= 2/3 ×24

$= 2/3 \times 24/1$

$= (2 \times 24)/(3 \times 1)$

$$= \frac{2}{1\cancel{3}} \quad \frac{\cancel{24}^{8}}{1}$$

$= (2 \times 8)/(1 \times 1)$

$= 16$

Therefore, 2/3 of a day = 16 hours