Fractions and Decimals: Exercise 2.3

Q.1 Find: (i) 1/4 of	(a)) 1/4	(b) 3/	5	(c) 4/3
(ii) (1/7)	of (a)) 2/9	(b) 6/	5	(c) 3/10
Sol:					
(i) Given: 1/4 of	(a) 1/4 (b)	3/5	(c) 4/3		
(a) $1/4$ of $1/4 = (1/4)$	x (1/4)				
=(1/8)					
(b) $1/4$ of $3/5 = (1/4)$	x (3/5)				
= 3/20					
(c) $1/4 \text{ of } 4/3 = (1/4)$	x (4/3)				
=(4/12)					
= 1/3					
(ii) Given: (1/7) of	(a) 2/9	(b) 6/	5	(c) $3/10$)
(a) $(1/7)$ of $2/9 = (1/7)$	r) x (2/9)				
= 2/63					
(b) $(1/7)$ of (b) $6/5 = 6$	(1/7) x (6/5	;)			
= 6/	35				
(c) $(1/7)$ of $3/10 = (1/7)$	7) x 3/10				
= 3/70	1				

Q.2 Multiply and reduce to lowest form (if possible):(i) $\frac{2}{3} \ge 2\frac{2}{3}$ (ii) $(2/7) \ge (7/9)$ (iii) $(3/8) \ge (6/4)$ (iv) $(9/5) \ge (3/5)$ (v) $(1/3) \ge (15/8)$ (vi) $(11/2) \ge (3/10)$ (vii) $(4/5) \ge (12/7)$ Sol:

(i) Given: $\frac{2}{3} \ge 2\frac{2}{3}$

Firstly, we convert the given mixed fraction into improper fraction.

$$\frac{2}{3} \ge 2\frac{2}{3} = (2/3) \ge (8/3)$$

= (16/9)
= $1\frac{7}{9}$
(ii) Given: (2/7) $\ge (7/9) = 14/63$
= 2/9
(iii) Given: (3/8) $\ge (6/4) = 18/24$
= 3/4
(iv) Given: (9/5) $\ge (3/5) = (9 \ge 3)/(5 \ge 5)$
= 27/25 or $1\frac{2}{25}$

(v) Given:
$$(1/3) \ge (15/8) = (15 \ge 1)/(3 \ge 8)$$

= $15/24$
= $5/8$
(vi) Given: $(11/2) \ge (3/10) = (11 \ge 3)/(2 \ge 10)$
= $33/20 \text{ or } 1\frac{13}{20}$
(vii) Given: $(4/5) \ge (12/7) = (4 \ge 12)/(5 \ge 7)$
= $48/35 \text{ or } 1\frac{13}{35}$

Q.3 Multiply the following fractions:

Q.3 Multiply the following iracuous: (i) $\frac{2}{5} \times 5\frac{1}{4}$ (ii) $6\frac{2}{5} \times \frac{7}{9}$ (iii) $\frac{3}{2} \times 5\frac{1}{3}$ (iv) $\frac{5}{6} \times 2\frac{3}{7}$

Sol:

(i) Given: $\frac{2}{5} \ge 5\frac{1}{4}$

Firstly, we convert the given mixed fraction into improper fraction.

(v) $3\frac{2}{5} \times \frac{4}{7}$ (vi) $2\frac{3}{5} \times 3$ (vii) $3\frac{4}{7} \times \frac{3}{5}$

$$\frac{2}{5} \ge 5\frac{1}{4} = (2/5) \ge (21/4)$$
$$= (21 \ge 2)/(5 \ge 4)$$
$$= 42/20$$
$$= 21/20 \text{ or } 1\frac{1}{20}$$

(ii) Given: $6\frac{2}{5} \ge \frac{7}{9}$

Firstly, we convert the given mixed fraction into improper fraction.

$$6\frac{2}{5} \times \frac{7}{9} = (32/5) \times (7/9)$$
$$= (32 \times 7)/(5 \times 9)$$
$$= 224/45 \text{ or } 4\frac{44}{45}$$

(iii) Given: $\frac{3}{2} \ge 5\frac{1}{3}$

Firstly, we convert the given mixed fraction into improper fraction.

$$\frac{3}{2} \times 5\frac{1}{3} = (3/2) \times (16/3)$$
$$= (16 \times 3)/(3 \times 2)$$

= 48/6 = 8

(iv) Given:
$$\frac{5}{6} \ge 2\frac{3}{7}$$

Firstly, we convert the given mixed fraction into improper fraction.

$$\frac{5}{6} \ge 2\frac{3}{7} = (5/6) \ge (17/7)$$
$$= (5 \ge 17)/(6 \ge 7)$$
$$= 85/42 \text{ or } 2\frac{1}{42}$$

(v) Given: $3\frac{2}{5} \ge \frac{4}{7}$

Firstly, we convert the given mixed fraction into improper fraction.

$$3\frac{2}{5} \times \frac{4}{7} = (17/5) \times (4/7)$$
$$= (17 \times 4)/(5 \times 7)$$
$$= 68/35$$
$$= 1\frac{33}{35}$$

(vi) Given: $2\frac{3}{5} \ge 3$

Firstly, we convert the given mixed fraction into improper fraction.

$$2\frac{3}{5} \times 3 = (13/5) \times 3$$

= 39/5 or $7\frac{4}{5}$

(vii) Given: $3\frac{4}{7} \times \frac{3}{5}$

Firstly, we convert the given mixed fraction into improper fraction.

$$3\frac{4}{7} \times \frac{3}{5} = (25/7) \times (3/5)$$

= (25x3)/ (7x5)
= 75/35
= 15/7 or $2\frac{1}{7}$

Q.4 Which is greater: (i) (2/7) of (3/4) or (3/5) of (5/8)

Sol:

(i)Given: (2/7) of (3/4) or (3/5) of (5/8) By simplify both the fractions, (2/7) of $(3/4) = (2/7) \times (3/4)$ =(2x3)/(7x4)= 6/28= 3/14And (3/5) of $(5/8) = (3/5) \times (5/8)$ =(3x5)/(5x8)= 15/40= 3/8Now, we will convert fractions into like fractions, LCM of 14 and 8 is 56. 3/14 = (3x4)/(14x4) = 12/56And 3/8 = (3x7)/(8x7) = 21/56From above calculation, (12/56) < (21/56)Thus, (3/14) < (3/8)or (2/7) of (3/4) < (3/5) of (5/8) (ii) Given: (1/2) of (6/7) or (2/3) of (3/7)By simplify both the fractions, (1/2) of $(6/7) = (1/2) \times (6/7)$ =(1x6)/(2x7)= 6/14= 3/7And (2/3) of $(3/7) = (2/3) \times (3/7)$ =(2x3)/(3x7)= 6/21 = 2/7From above calculation, (3/7) > (2/7)Or (1/2) of (6/7) > (2/3) of (3/7)

Q.5 Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings $\frac{3}{1000}$ m. Find the distance between the first and the last sapling.

Sol: Given: Distance between two adjacent saplings = 3/4 m

Number of saplings planted in a row = 4

So, number of gap in saplings = $(3/4) \times 4$ = 3

Now, distance between the first and the last saplings = $3 \times (3/4)$ = (9/4) m

$$=2\frac{1}{4}$$
 m

=

Hence, the distance between the first and the last saplings = $2\frac{1}{4}$ m

Q.6 Lipika reads a book for $1\frac{3}{4}$ hours every day. She reads the entire book in 6 days. How many hours in all were required by her to read the book? Sol: Given: Lipika reads the book for $1\frac{3}{4}$ hours or 7/4 hours every day. And number of days to read the entire book = 6 days So, total number of hours required by Lipika to complete the book = $(7/4) \times 6$ $= (7/2) \times 3$ = 21/2 $= 10\frac{1}{2}$ hours Thus, hours required by Lipika to complete the book = $10\frac{1}{2}$ hours Q.7 A car runs 16 km using 1 litre of petrol. How much distance will it cover using $2\frac{3}{4}$ litres of petrol. Sol: Given: Distance covered by a car in 1 liter petrol = 16 km

And quantity of petrol = $2\frac{3}{4}$ liter or 11/4 liters

Total distance covered by car in 11/4 liters of petrol = $(11/4) \times 16$

= 11 × 4 = 44 km

Thus, distance travelled by car in $2\frac{3}{4}$ liter or 11/4 liters petrol = 44 km

Q.8 (a) (i) Provide the number in the box [], such that $\frac{2}{3} \ge 1 = \frac{10}{30}$. (ii) The simplest form of the number obtained in [] is _____. (b) (i) Provide the number in the box [], such that $\frac{3}{5} \ge 1 = \frac{24}{75}$ (ii) The simplest form of the number obtained in is []_____.

(a) Given: (i) the number in the box [], such that $\frac{2}{3}$ x [] = $\frac{10}{30}$.

Let x be the required number in the box [], So, $(2/3) \times [x] = (10/30)$ BY cross multiplication, $x = (10/30) \times (3/2)$ $x = (10 \times 3) / (30 \times 2)$ x = 30/60x = 5/10Thus, the required number in the box = (5/20) (ii) The simplest form of $5/10 = \frac{1}{2}$ (b) Given: the number in the box [], such that $\frac{3}{5}$ x [] = $\frac{24}{75}$

Let x be the required number in the box [], So, $(3/5) \times [x] = (24/75)$ By cross multiplication, $x = (24/75) \times (5/3)$ $x = (24 \times 5) / (75 \times 3)$ x = 120/150x = 8/15Thus, the required number in the box = (8/15) (ii) The simplest form of 8/15 = 8/15.