Unit: 3	FRACTIONS Exercise No: 1

(a) $\frac{1}{2}+\frac{2}{4}$

$\frac{1\times2+2\times1}{4}=\frac{4}{4}=1$

$2\overline{)2,4}$
$2\overline{)1,2}$
$\overline{1,1}$

LCM = 2 x 2 =4

(b) $5\frac{2}{3}+2\frac{5}{7}$

$\frac{17}{3}+\frac{19}{7}$

$3\overline{)3-7}$
$7\overline{)1-7}$
$\overline{1-1}$

$\frac{17\times7+19\times3}{21}$

LCM = 3 x 7 =21

$\frac{119+57}{21}=\frac{176}{21}$ Ans

(c) $3\frac{4}{5}+\frac{5}{7}$

$\frac{19}{5}+\frac{5}{7}$

$5\overline{)5-7}$
$7\overline{)1-7}$
$\overline{1,1}$

LCM= 5 x 7 = 35

$\frac{19\times7+5\times5}{35}$

$\frac{133+25}{35}=\frac{158}{35}=4\frac{18}{35}$ Ans

Now $35\overline{)158}\ (4$
-140
$\overline{18}$

(d) $4\frac{7}{10}+\frac{6}{8}$

$\frac{47}{10}+\frac{6}{8}$

$\frac{47\times4+6\times5}{40}$

$2\overline{)10,8}$
$2\overline{)5,4}$
$\overline{5,2}$

LCM= 2 x 2 x 5 x 2 =40

$\frac{188+30}{40}$

$\frac{218}{40}=5\frac{18}{40}=5\frac{9}{20}$ Ans

Now $40\overline{)218}\ (5$
-200
$\overline{18}$

(e) $\frac{7}{9}+\frac{6}{8}+\frac{6}{3}$

(f) $1\frac{3}{10}+6\frac{14}{20}+2\frac{15}{40}$

$\frac{13}{10}+\frac{134}{20}+\frac{95}{40}$

$\frac{7\times8+6\times9+6\times24}{72}$

3 | 9, 8, 3
2 | 3, 8, 1
2 | 3, 4, 1
3, 2, 1

$\frac{56+54+144}{72}$

LCM = 3 x 2 x 2 x 3 x 2 =72

$\frac{254}{72}=3\frac{38}{72}$ ANS

Or $3\frac{19}{36}$ ANS

$$\begin{array}{r} 3 \\ 72\overline{)254} \\ -\,216 \\ \hline 38 \end{array}$$

$\frac{13\times4+134\times2+95\times1}{40}$

2 | 10, 20, 40
5 | 5, 10, 20
2 | 1, 2, 4
1, 1, 2

LCM = 2x5x2x2=40

$\frac{52+268+95}{40}=\frac{415}{40}=10\frac{15}{40}$

$10\frac{3}{8}$ Ans.

(g) $\frac{24}{6}+\frac{31}{12}+\frac{43}{24}$

$\frac{24\times4+31\times2+43\times1}{24}$

6 | 6, 12, 24
2 | 1, 2, 4
1, 1, 2

LCM= 6 x 2 x2=24

$\frac{96+62+43}{24}$

$\frac{201}{24}=8\frac{9}{24}=8\frac{3}{8}$ Ans

$$\begin{array}{r} 8 \\ 24\overline{)201} \\ -\,192 \\ \hline 9 \end{array}$$

(h) $\frac{7}{8}+4\frac{1}{4}+\frac{5}{16}$

$\frac{7}{8}+\frac{17}{4}+\frac{15}{16}$

$=\frac{7\times2+17\times4+15\times1}{16}$

2 | 8, 4, 16
2 | 4, 2, 8
2 | 2, 1, 4
1, 1, 2

LCM = 2 x 2 x 2 x 2= 16

$=\frac{14+68+15}{16}=\frac{97}{16}$

$=6\frac{1}{16}$ Ans

$$\begin{array}{r} 6 \\ 16\overline{)97} \\ -\,96 \\ \hline 1 \end{array}$$

(Q2) Solve the following fractions.

(a) $\frac{3}{2}-\frac{2}{24}$

(b) $2\frac{16}{18}-1\frac{4}{6}$

$\frac{3\times12-2\times1}{24}$

$2|2,24$
$2|1,12$
$2|1,6$
$|1,3$

LCM=2x2x2x3=24

$=\frac{36-2}{24}$

$=\frac{34}{24}=1\frac{10}{24}=1\frac{5}{12}$

Ans: $24\overline{)34}\ 1$, -24, 10

$\frac{52}{18}-\frac{10}{6}$

$2|18,6$
$3|9,3$
$|3,1$

LCM=2x3x3=18

$=\frac{52\times1-10\times3}{18}$

$=\frac{52-30}{18}$

$=\frac{22}{18}=1\frac{4}{18}$

$=1\frac{2}{9}$ Ans $18\overline{)22}\ 1$, -18, 4

(c) $3\frac{5}{14}-1\frac{2}{21}$

$=\frac{47}{14}-\frac{23}{21}$

$7|14,21$
$|2,3$

LCM=7x2x3=42

$=\frac{47\times3-23\times2}{42}$

$=\frac{141-46}{42}=\frac{95}{42}$

$=2\frac{11}{42}$ Ans $42\overline{)95}\ 2$, -84, 11

(d) $\frac{5}{6}-\frac{6}{11}$

$=\frac{5\times11-6\times6}{66}$

$3|6-11$
$|2-11$

LCM=3x2x7=66

$=\frac{5\times11-6\times6}{66}$

$=\frac{55-36}{66}=\frac{19}{66}$ Ans=

(e) $4\frac{1}{6}-\frac{17}{18}$

$\frac{25}{6}-\frac{17}{18}$

$3|6,18$
$2|2,6$
$|1,3$

(f) $\frac{21}{12}-\frac{8}{10}$

$\frac{21\times5-8\times6}{60}$

$2|12,10$
$2|6-5$
$|3-5$

LCM=3 x2x3 =18

$= \frac{25\times3-17\times1}{18}$

$= \frac{75-17}{18} = \frac{58}{18}$

$= 3\frac{4}{18} = 3\frac{2}{9}$ Ans

$18\overline{)58}\ (3$, -54, 4

LCM = 2 x 2 x 3 x 5 = 60

$= \frac{105-48}{60}$

$= \frac{57}{60} = \frac{19}{20}$ Ans

(g) $2\frac{13}{24} - \frac{4}{18}$

$\frac{61}{24} - \frac{4}{18}$

$2\,|\,24-18$

$3\,|\,12-9$

$2\,|\,4-3$

$|\,2-3$

LCM= 2 x 3 x 2 x 2 x 3 = 72

$= \frac{61\times3-4\times4}{72}$

$= \frac{183-16}{72} = \frac{167}{72}$

$= 2\frac{23}{72}$ Ans

$72\overline{)167}\ (2$, -144, 23

(h) $5\frac{1}{8} - \frac{5}{15}$

$\frac{41}{8} - \frac{5}{15}$

$2\,|\,8,15$

$2\,|\,4,15$

$5\,|\,2,15$

$|\,2-3$

LCM= 2 x 2 x 5 x 2 x 3 =120

$= \frac{41\times15-5\times8}{120}$

$= \frac{615-40}{120} = \frac{575}{120} =$

$\frac{95}{120} = 4\frac{19}{24}$ Ans

$120\overline{)575}\ (4$, -480, 95

3. To practice for a marathon, Raheel ran $\frac{1}{4}$ km on Monday, $\frac{7}{8}$ km on Tuesday and $\frac{15}{6}$ km on Wednesday. Find out the total distance he covered in three days.

Raheel Ran on Monday = $\frac{1}{4}$ Km

He Ran on Tuesday = $\frac{7}{8}$ Km

He Ran on Wednesday = $\frac{15}{6}$ Km

Total Distance= $\frac{1}{4}+\frac{7}{8}+\frac{15}{6}$

$= \frac{1\times6+7\times3+15\times4}{24}$ $\quad 2|4,8,6$ $\quad 2|2,4,3$ $\quad |1,2,3$ LCM= 2 x 2 x 2 x 3 = 24

$= \frac{6+21+60}{24}$ $= \frac{87}{24} = 3\frac{15}{24}$ $= 3\frac{3}{8}$ Km $\quad 24\overline{)87}\ 3$ $\quad -\frac{72}{15}$

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.4. Saad spent $2\frac{1}{2}$ hours to prepare for his mathematics test and $1\frac{1}{4}$ hours to prepare for the Urdu test. Find:

a) In which subject did he spend more time and by how much?

b) How much time did he spend altogether?

(4a)

Saad Study for math=$2\frac{1}{2}$ Hr

Saad study for Urdu test= $1\frac{1}{4}$ Hr

(a) $2\frac{1}{2}-1\frac{1}{4}$

$= \frac{5}{2}-\frac{5}{4}$ $\quad 2|2,-4$ $\quad 2|1,-2$ $\quad |1,-1$

LCM= 2 x 2 = 4

$\frac{5\times2-5\times1}{4}$

$= \frac{10-5}{4} = \frac{5}{4} = 1\frac{1}{4}$h $\quad \sqrt[4]{5}\ 1$ $\quad -4$

He spent $1\frac{1}{4}$ hour more for Maths.

(4b)

$2\frac{1}{2}+1\frac{1}{4}$

$= \frac{5}{2}+\frac{5}{4}$

$= \frac{5\times2+5\times1}{4}$

$= \frac{10+5}{4} = \frac{15}{4}$

$\sqrt[4]{15}\ 3$

-12

3

Total $3\frac{3}{4}$ hours were spent together to prepare both subject.

5. An electrician has $18\frac{8}{9}$ m of wire. If he uses $\frac{2}{9}$ m and $2\frac{1}{3}$ m in two rooms, then find:

a) How much wire did he use?

b) How much wire does he have left?

(5a) Total wire = $18\frac{8}{9}$ m

Wire used= $\frac{2}{9}$ m

Wire used in second room =

$2\frac{1}{3}$ m

$\frac{2}{9}+2\frac{1}{3}$ $\quad 3|3,9$ LCM=9
$\quad\quad\quad\quad\quad\quad 1,3$

$=\frac{2}{9}+\frac{7}{3}$ $\quad\quad 2\overline{)23}$ $\quad -18$ $\quad 5$

$=\frac{2\times1+7\times3}{9}$

$=\frac{2+21}{9}=\frac{23}{9}$

$=2\frac{5}{9}$ meter used.

(5b) Total wire = $18\frac{8}{9}=\frac{170}{9}$

Total wire used = $2\frac{5}{9}=\frac{23}{9}$

Length of wire left = $\Rightarrow \frac{170}{9}-\frac{23}{9}$

$=\frac{170\times1-23\times1}{9} \Rightarrow \frac{170-23}{9}=\frac{147}{9}$

$\frac{49}{3}=16\frac{3}{9}$ or $16\frac{1}{3}$ $\quad 9\overline{)147}$ $\quad -144$ $\quad 3$ $\quad 16$

6. Write $\frac{10}{12}$ as the sum of three fractions and show this using figures.

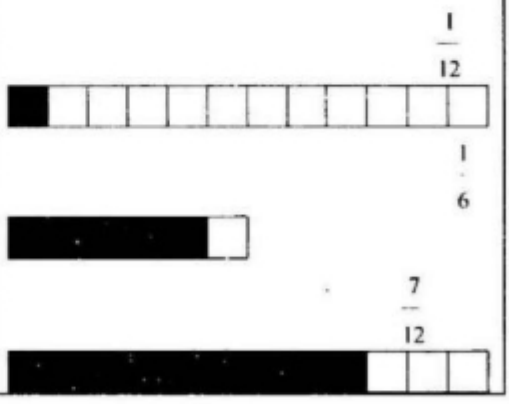
Given fraction= $\frac{10}{12}$

To be written in three fractions:

$\frac{1}{12}+\frac{2}{12}+\frac{7}{12}$

$=\frac{1\times1+2\times1+7\times1}{12}=\frac{1+2+7}{12}=\frac{10}{12}$

$\frac{10}{12}=+\frac{1}{12}+\frac{1}{6}+\frac{7}{12}$



7. Write $\frac{4}{7}$ as the difference of two fractions.

(7)Given fraction is $\frac{4}{7}$

Ans = $\frac{4}{7}=\frac{5-1}{7}=\frac{5}{7}-\frac{1}{7}$

$\frac{4}{7}=\frac{5}{7}-\frac{1}{7}$

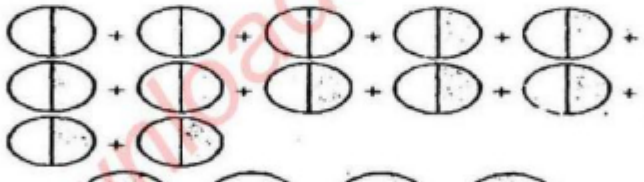
Exercise No: 2

1. Solve the following with the help of figure.

(a) $\frac{1}{2}\times 12$

$\frac{1}{2}\times 12=\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$

$\frac{1+1+1+1+1+1+1+1+1+1+1+1}{2}=\frac{12}{2}=6$



$\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}=6$

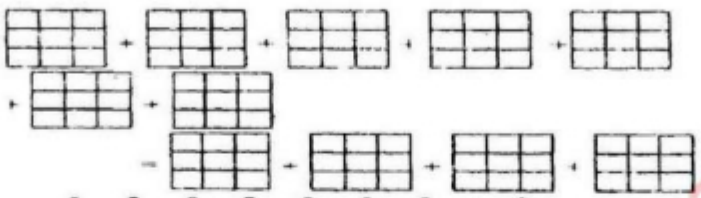
$\frac{1}{2}\times 12=6$

(b) $\frac{5}{9}x7$

$\frac{5}{9}x7=\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}$

$\frac{5+5+5+5+5+5+5}{9} = \frac{35}{9} = 3\frac{8}{9}$

$$\begin{array}{r} 3 \\ 9\overline{)35} \\ -27 \\ \hline 8 \end{array}$$



$\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9} = 3\frac{8}{9}$

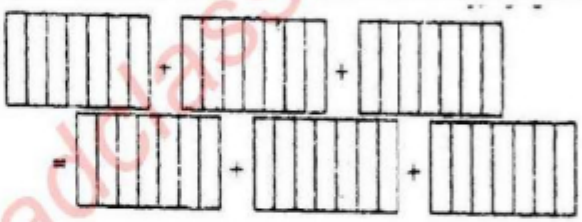
$\frac{5}{9} \times 7 = 3\frac{8}{9}$

(c) $\frac{6}{7} \times 3$

$\frac{6}{7} \times 3 = \frac{6}{7}+\frac{6}{7}+\frac{6}{7}$

$\frac{6+6+6}{7} = \frac{18}{7} = 2\frac{4}{7}$

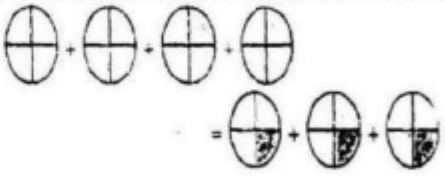
$$\begin{array}{r} 2 \\ 7\overline{)18} \\ -14 \\ \hline 4 \end{array}$$



(d) $\frac{3}{4} \times 4$

$\frac{3}{4} \times 4 = \frac{3}{4}+\frac{3}{4}+\frac{3}{4}+\frac{3}{4}$

$= \frac{3+3+3+3}{4} = +\frac{12}{4} = 3$



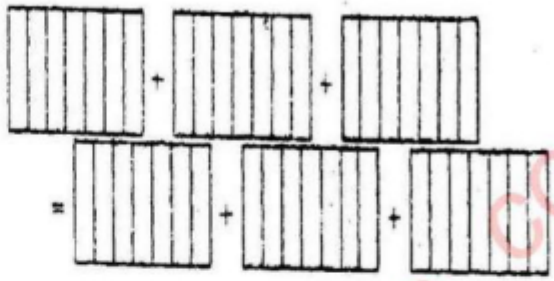
e) $\frac{2}{3}\times 5$

$\frac{2}{3}\times 5=\frac{2}{3}+\frac{2}{3}+\frac{2}{3}+\frac{2}{3}+\frac{2}{3}$

$=\frac{2+2+2+2+2}{3}=$

$=\frac{10}{3}=3\frac{1}{3}$

$3\overline{)10}$ R 1, quotient 3, 9



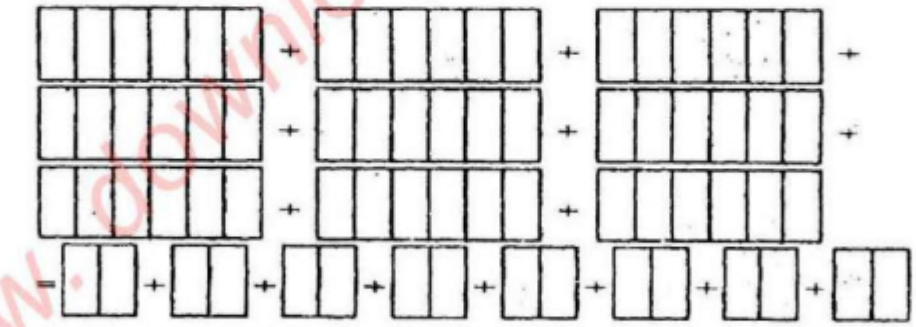
(f) $\frac{5}{6}\times 9$

$\frac{5}{6}\times 9=\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}+\frac{5}{9}$

$=\frac{5+5+5+5+5+5+5+5+5}{6}=\frac{45}{6}$

$=\frac{\cancel{45}^{15}}{\cancel{6}_{2}}=\frac{15}{2}=7\frac{1}{2}$

$2\overline{)15}$ R 1, quotient 7, 14



Q2: Solve the following.

(a) $\frac{4}{5}\times\frac{1}{4}$ Solution: $\frac{4\times 1}{5\times 4}=\frac{\cancel{4}^{1}}{\cancel{20}_{5}}=\frac{1}{5}$

(b) $\frac{3}{7}\times\frac{14}{18}$ Solution: $\frac{3\times 14}{7\times 18}=\frac{\cancel{42}^{1}}{\cancel{126}_{3}}=\frac{1}{3}$

(c) $\frac{5}{3}\times\frac{75}{20}$ Sol: $\frac{5\times75}{3\times20}=\frac{\overset{75}{\cancel{375}}}{\cancel{60}_{12}}=\frac{75}{12}=6\frac{\cancel{3}}{\cancel{12}_{4}}=6\frac{1}{4}$

$12\overline{)75}\ 6$, -72, 3

(d) $\frac{58}{60}\times\frac{4}{20}\times\frac{10}{20}$

Sol: $\frac{\cancel{58}^{29}}{\cancel{60}_{30}}\times\frac{\cancel{4}^{1}}{\cancel{20}_{5}}\times\frac{\cancel{10}^{1}}{\cancel{20}_{2}}\Rightarrow\frac{29\times1\times1}{30\times5\times2}=\frac{29}{300}$

(e) $\frac{2}{7}\times\frac{4}{5}\times\frac{3}{7}$ Sol: $\frac{2\times4\times3}{7\times5\times7}=\frac{24}{245}$

(f) $\frac{30}{28}\times\frac{2}{8}\times\frac{6}{9}$ Sol: $\frac{\cancel{30}^{15}}{\cancel{28}_{14}}\times\frac{\cancel{2}^{1}}{\cancel{8}_{4}}\times\frac{\cancel{6}^{2}}{\cancel{9}_{3}}$

$=\frac{15\times1\times2}{14\times4\times3}=\frac{\cancel{30}^{5}}{\cancel{168}_{28}}=\frac{5}{28}$ as dividing by 6.

(g) $1\frac{3}{5}\times2\frac{3}{7}\times3\frac{3}{4}$ Sol$=\frac{8}{5}\times\frac{17}{7}\times\frac{15}{4}=\frac{\cancel{8}^{2}\times17\times\cancel{15}^{3}}{\cancel{5}\times7\times\cancel{4}_{1}}$

$\frac{2\times17\times3}{1\times7\times1}=\frac{102}{7}=14\frac{4}{7}$

$7\overline{)102}\ 14$, -98, 4

(h) $5\frac{10}{35}\times8\frac{2}{5}\times9\frac{3}{11}$ Sol$=\frac{185}{35}\times\frac{42}{5}\times\frac{102}{11}\Rightarrow\frac{37}{7}\times\frac{\cancel{42}^{6}}{5}\times\frac{102}{11}$

$\Rightarrow\frac{37\times\cancel{42}^{6}\times102}{\cancel{7}_{1}\times5\times11}=\frac{22644}{55}\Rightarrow411\frac{39}{55}$ Ans

$55\overline{)22644}\ 411$, -22605, 39

(i) $9\frac{1}{9}\times10\frac{1}{3}\times5\frac{1}{2}$ Sol$=\frac{82}{9}\times\frac{31}{3}\times\frac{11}{2}$

$\Rightarrow\frac{\cancel{82}^{41}\times31\times11}{9\times3\times\cancel{2}_{1}}\Rightarrow\frac{41\times31\times11}{9\times3\times1}=\frac{13981}{27}$

$\Rightarrow 517\frac{22}{27}$ =Ans

$$\begin{array}{r} 517 \\ 27\overline{)13981} \\ -13959 \\ \hline 22 \end{array}$$

(Q3) Solve the following.

(a) $\frac{4}{12} \div \frac{4}{18}$

Sol:

$\frac{4}{12} \times \frac{18}{4} \Rightarrow \frac{\cancel{4}^{1} \times \cancel{18}^{6}}{\cancel{12} \times \cancel{4}_{1}} = \frac{1 \times \cancel{6}^{3}}{\cancel{4}_{2} \times 1}$

$= \frac{3}{2}$ Ans Or $1\frac{1}{2}$ *Ans*

$$\begin{array}{r} 1 \\ 2\overline{)3} \\ -2 \\ \hline 1 \end{array}$$

(b) $\frac{3}{25} \div \frac{9}{45}$

Sol: $\frac{\cancel{3}^{1}}{\cancel{25}_{5}} \times \frac{\cancel{45}^{9}}{\cancel{9}_{3}} = \frac{1 \times \cancel{9}^{3}}{5 \times \cancel{3}_{1}}$

$= \frac{1 \times 3}{5 \times 1} = \frac{3}{5}$

(c) $\frac{5}{60} \div \frac{7}{20}$

Sol:

$\frac{5}{60} \times \frac{20}{7} = \frac{5 \times \cancel{20}^{2}}{\cancel{60}_{6} \times 7} = \frac{5 \times \cancel{2}^{1}}{\cancel{6}_{3} \times 7}$

$= \frac{5}{21}$ Ans

(d) $2\frac{58}{60} \div 4\frac{4}{20}$

Sol: $\frac{178}{60} \div \frac{84}{20} \Rightarrow \frac{\cancel{178}^{89}}{\cancel{66}_{3}} \times \frac{\cancel{20}^{1}}{\cancel{84}_{42}}$

$= \frac{89 \times 1}{3 \times 42} = \frac{89}{126}$ Ans

(e) $5\frac{5}{9} \div 9\frac{6}{7}$

$\frac{50}{9} \div \frac{69}{7} \Rightarrow \frac{50}{9} \times \frac{7}{69} =$

$= \frac{350}{621}$

(f) $6\frac{30}{32} \div 7\frac{2}{4}$

Sol: $\frac{222}{32} \div \frac{30}{4} \Rightarrow \frac{\cancel{222}^{111}}{\cancel{32}_{8}} \times \frac{\cancel{4}^{1}}{30}$

$= \frac{\cancel{111}^{37}}{4 \times \cancel{30}_{10}} \Rightarrow \frac{37 \times 1}{4 \times 10} = \frac{37}{40}$ Ans

(g) $2\frac{5}{6} \div 4\frac{2}{9}$

(h) $3\frac{1}{2} \div \frac{4}{9}$

Sol: $\frac{7}{2} \div \frac{4}{9} \Rightarrow \frac{7}{2} \times \frac{9}{4} \Rightarrow \frac{7 \times 9}{2 \times 4}$

Sol: $\frac{17}{6} \div \frac{38}{9} \Rightarrow \frac{17}{6} \times \frac{9}{38}$

$= \Rightarrow \frac{17 \times 3}{2 \times 38} \Rightarrow \frac{51}{76}$ Ans

$\Rightarrow \frac{63}{8} = 7\frac{7}{8}$ Ans

$8\overline{)63}$ (7), -56, 7

(i) $\frac{1}{7} \div 2\frac{6}{7}$

Sol:

$\frac{1}{7} \div \frac{20}{7} \Rightarrow \frac{1}{7} \times \frac{7}{20} \Rightarrow \frac{1 \times 1}{1 \times 20}$

$= \frac{1}{20}$ Ans

4. If $5\frac{1}{2}$ m of cloth is used to stitch one dress, how much cloth will be used to stitch 7 dresses?

Cloth used to stitch one dress $= 5\frac{1}{2} = \frac{11}{2}$ m

Cloth used to stitch 7 dresses $= 7x\frac{11}{2}$ m $\Rightarrow 7(\frac{11}{2}) = \frac{77}{2}$

$= 38\frac{1}{2}$ Meter Ans

$2\overline{)77}$ (38), -76, 1

5. Hina ate $\frac{1}{2}$ of a cake. If there were 8 pieces of cake, how many pieces did Hina eat?

Hina ate cake $= \frac{1}{2}$ part

8 piece of a cake $= (\frac{1}{2})8$

$\frac{1}{2} \times \frac{8}{1} \Rightarrow \frac{1}{2} \times \frac{8}{1} = \frac{8}{2}$

$= 4$ pieces Ans.

6. Nida had $\frac{3}{12}$ of a pizza. She gave $\frac{1}{8}$ of it to her friend Madeeha. Find out what part of the whole pizza did Madeeha get?

Nida had $\frac{3}{12}$ of a Pizza $= \frac{3}{12} =$ 1/4

Nida gave to her friend $= \frac{1}{8}$

So, $= \frac{1}{8} \times \frac{1}{4} = \frac{1}{32}$ Ans

7. To decorate the classroom, Hassan used ribbons in two colors. The length of blue ribbon is $5\frac{7}{8}$ meters. The length of red ribbon is $\frac{2}{3}$ of the length of blue ribbon.

a) What is the length of red ribbon?

b) Find the total length of both ribbons.

Length of blue ribbon$=5\frac{7}{8}$ meters or $\frac{47}{8}$

Length of red ribbon more than blue ribbon $=\frac{2}{3}$

First makes three of blue$=\frac{47}{8_4}\times\frac{2}{3}=\frac{47}{12}m$

Length of red ribbon $=\frac{47}{8_4}\times\frac{2}{3}=\frac{47}{12}m$

(a) Length of red ribbon $=3\frac{11}{12}$m

(b) Total length of both ribbon $=5\frac{7}{8}\text{m}+3\frac{11}{12}\text{m}$

$=\frac{47}{8}\text{m}+\frac{47}{12}\text{m}\Rightarrow\frac{47\times3+47\times2}{24}$

$=\frac{141+94}{24}=\frac{235}{24}\text{m}=9\frac{19}{24}$ m Ans

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8. Find the number which returns in $4\frac{5}{9}$ when multiplied by $6\frac{1}{6}$.

The number when multiplied by $6\frac{1}{6}$. $=x$

$x\times6\frac{1}{6}=4\frac{5}{9}$ $=x\times\frac{37}{6}=\frac{41}{9}$

$x=\frac{41}{6}\div\frac{37}{6}=\frac{41}{6}\times\frac{6}{37}=\frac{41\times6}{9\times37}=\frac{82}{111}$

When multiplied $= \frac{82}{111} \times 6\frac{1}{6} =$ *We get* $4\frac{5}{9}$

.....

9. $44\frac{1}{6}$ kilogram sugar is to be packed in $4\frac{5}{12}$ kilogram packets, Find:

a) In how many packets sugar will be packed?

b) How much sugar will be there in 9 packets of mass $4\frac{5}{12}$ kilograms?

(a) Quantity of suagr = $44\frac{1}{6} = \frac{265}{6}$ kg Capacity of pocket $= 4\frac{5}{12} = \frac{53}{12}$ $\frac{265}{6} \div \frac{53}{12} \Rightarrow \frac{265}{6_1} \times \frac{12^2}{53}$ $= \frac{530}{53} = 10$ Packets	(b)Sugar in 9 packets $= 9 \times 4\frac{5}{12}$ $9 \times \frac{53}{12}$ $= \frac{9}{1} \times \frac{53}{12_4} =$ $= \frac{3 \times 53}{4} = \frac{159}{4}$ $= 39\frac{3}{4}$ Kg Ans

Unit: Fractions = Review Exercise

1. Encircle the correct option.

(a) $\frac{1}{3} + \frac{2}{5} =$ $\frac{1}{15}$

(i) $\frac{3}{5}$ **(ii)** $\frac{11}{15}$ (iii) $\frac{3}{8}$ (iv) $\frac{12}{15}$

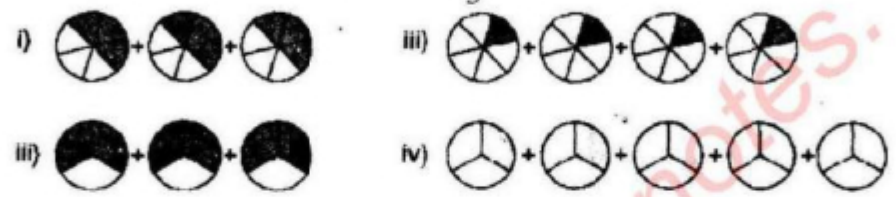
(b) $\frac{5}{9} - \frac{2}{3} =$ $\frac{1}{9}$

(i) $\frac{3}{9}$ (ii) $\frac{7}{3}$ **(iii)** $\frac{1}{9}$ (iv) $\frac{7}{9}$

(c)The product $\frac{3}{4}$ and $\frac{4}{3}$ is 1

(i)1000 (ii)10 **(iii)1** (iv)111

(d)Which figure is showing $5x \frac{1}{3}$? Ans: iv



(i) (ii) (iii) **(iv)**

(e) When **adding and multiplying** changing the order of the fractions will not affect the result.

(i)Adding and subtracting (ii)Subtracting and dividing

(iii)multiplying and dividing **(iv) Adding and multiplying.**

.....

Q2) Solve the following.

(a) $\frac{7}{20}+4\frac{3}{10}$

$=\frac{7}{20}+\frac{43}{10}=\frac{7\times1+43\times2}{20}$

$=\frac{7+86}{20}\Rightarrow\frac{93}{20}=4\frac{13}{20}$ Ans

$$\begin{array}{r} 4 \\ 20\overline{)93} \\ -80 \\ \hline 13 \end{array}$$

(b) $\frac{8}{5}+\frac{19}{15}+5\frac{4}{30}$

$=\frac{8}{5}+\frac{19}{15}+\frac{154}{30}$

$=\frac{8\times6+19\times2+154\times1}{30}$

$=\frac{48+38+154}{30}$

$=\frac{240}{30}$ A = 8 Ans

$$\begin{array}{r} 8 \\ 30\overline{)240} \\ -240 \\ \hline 0 \end{array}$$

(c) $3\frac{14}{50} - 2\frac{9}{25} = \frac{164}{50} - \frac{59}{25}$

$\frac{164\times1-59\times2}{50}$

$= \frac{164-118}{50} = \frac{\cancel{46}^{23}}{\cancel{50}^{25}}$

$= \frac{23}{25}$ Ans

(d) $1\frac{16}{44} \div \frac{4}{11}$

$\frac{60}{44} \div \frac{4}{11} \Rightarrow \frac{60}{44} \times \frac{11}{4}$

$= \frac{^{15}\cancel{60}\times\cancel{11}^{1}}{^{4}\cancel{44}\times\cancel{4}_{1}} \Rightarrow \frac{15\times1}{4\times1}$

$= \frac{15}{4} = 3\frac{3}{4}$ Ans

$\begin{array}{r} 3 \\ 4\overline{)15} \\ -12 \\ \hline 3 \end{array}$

(e) $2\frac{6}{31} \times \frac{62}{24} = \frac{68}{31} \times \frac{62}{24}$

$\frac{^{17}\cancel{68}}{\cancel{31}_{1}} \times \frac{\cancel{62}^{2}}{\cancel{24}^{6}}$

$= \frac{17\times2}{1\times6} = \frac{34}{6} = 5\frac{^{2}\cancel{4}}{\cancel{6}_{3}}$

$\begin{array}{r} 5 \\ 6\overline{)34} \\ -30 \\ \hline 4 \end{array}$ $= 5\frac{2}{3}$ Ans

(f) $1\frac{4}{7} + 2\frac{13}{28} + \frac{3}{4}$

$\frac{11}{7} + \frac{69}{28} + \frac{3}{4}$

$= \frac{11\times4+69\times1+3\times7}{28}$

$= \frac{44+69+21}{28} = \frac{134}{28}$

$\begin{array}{r} 4 \\ 28\overline{)134} \\ -112 \\ \hline 22 \end{array}$ $4\frac{^{2}\cancel{22}}{\cancel{28}_{14}}$ $4\frac{11}{14}$

(g) $3\frac{6}{8} + 3\frac{3}{4}$

$= \frac{30}{8} + \frac{15}{4}$

$= \frac{30\times1+15\times2}{8} = \frac{30+30}{8}$

$= \frac{60}{8} = \frac{\cancel{A}^{1}}{\cancel{8}_{2}}$ $7\frac{1}{2}$

$\begin{array}{r} 7 \\ 8\overline{)60} \\ -56 \\ \hline 4 \end{array}$

(h) $1\frac{3}{9} \times 25 = \frac{12}{9} \times 25$

$= \frac{12\times25}{9} = \frac{300}{9}$

$= 33\frac{\cancel{3}_{1}}{\cancel{9}_{3}}$ $33\frac{1}{3}$

$\begin{array}{r} 33 \\ 9\overline{)300} \\ -27 \\ \hline 3 \end{array}$

(c) $3\frac{14}{50} - 2\frac{9}{25} = \frac{164}{50} - \frac{59}{25}$

$\frac{164\times1-59\times2}{50}$

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$4\overline{)15}^{3}$
-12
3

(e) $2\frac{6}{31} \times \frac{62}{24} = \frac{68}{31} \times \frac{62}{24}$

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$6\overline{)34}^{5}$
-30
4

$= 5\frac{2}{3}$ Ans

(f) $1\frac{4}{7} + 2\frac{13}{28} + \frac{3}{4}$

$\frac{11}{7} + \frac{69}{28} + \frac{3}{4}$

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$4\frac{^{2}\cancel{22}}{\cancel{28}_{14}}$ $4\frac{11}{14}$

(g) $3\frac{6}{8} + 3\frac{3}{4}$

$= \frac{30}{8} + \frac{15}{4}$

$= \frac{30\times1+15\times2}{8} = \frac{30+30}{8}$

$= \frac{60}{8} = \frac{\cancel{4}^{1}}{\cancel{8}_{2}}$ $7\frac{1}{2}$

$8\overline{)60}^{7}$
-56
4

(h) $1\frac{3}{9} \times 25 = \frac{12}{9} \times 25$

$= \frac{12\times25}{9} = \frac{300}{9}$

$= 33\frac{\cancel{3}_{1}}{\cancel{9}_{3}}$ $33\frac{1}{3}$

$9\overline{)300}^{33}$
-27
3

(i) $6\frac{2}{3} \div 3\frac{1}{12} = \frac{20}{3} \div \frac{37}{12}$

$= \frac{20}{\cancel{3}_1} \times \frac{\overset{4}{\cancel{12}}}{37} = \frac{20 \times 4}{1 \times 37}$

$= \frac{80}{37} = 2\frac{6}{37}$

$37\overline{)80}\ 2$, -74, 6

(Q3) Find $2\frac{3}{4}$ of 36

$2\frac{3}{4} \times 36$

$\frac{11}{\cancel{4}_1} \times \cancel{36}^{9}$

$= 11 \times 9 = 99$

4. How many months will be there in $\frac{3}{4}$ of a year?

Total months in 1 year=12

So, $\frac{3}{4}$ of 12

$\frac{3}{\cancel{4}_1} \times \cancel{12}^{3}$

$= 3 \times 3 = 9$

5. Add the product of $\frac{4}{5}$ and $\frac{12}{2}$ to the quotient of $\frac{4}{45} \div \frac{4}{5}$

Product of $\frac{4}{5}$ and $\frac{12}{2}$

$\frac{\cancel{4}^{2}}{5} \times \frac{12}{\cancel{2}} = \frac{24}{5}$

Quotient of $\frac{4}{45} \div \frac{4}{5}$

$\frac{\cancel{4}^{1}}{\cancel{45}_{9}} \times \frac{\cancel{5}^{1}}{\cancel{4}_1} = \frac{1}{9}$

Now add

$\frac{24}{5} + \frac{1}{9} \Rightarrow \frac{24 \times 9 + 1 \times 5}{45}$

$\frac{216+5}{45} \Rightarrow \frac{221}{45} \Rightarrow 4\frac{41}{45}$ Ans

6. Marwa prepared $5\frac{6}{7}$ liters of apple juice. She served $3\frac{2}{5}$ liters of juice to the guests. Find out how much juice is left?

7. Ali's mother bought $3\frac{1}{2}$ kg of chicken, $1\frac{1}{2}$ kg of fish and $2\frac{1}{4}$ kg of mutton. Find out how many kilograms of meat she bought altogether?

(i) $6\frac{2}{3} \div 3\frac{1}{12} = \frac{20}{3} \div \frac{37}{12}$

$= \frac{20}{\cancel{3}_1} \times \frac{\overset{4}{\cancel{12}}}{37} = \frac{20 \times 4}{1 \times 37}$

$= \frac{80}{37} = 2\frac{6}{37}$

$37\overline{)80}\ (2$
-74
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(Q3) Find $2\frac{3}{4}$ of 36

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Marwa prepared juice= $5\frac{6}{7}\ell = \frac{41}{7}$

Juice served for guests = $3\frac{2}{5} = \frac{17}{5}$

Juice left= $\frac{41}{7} - \frac{17}{5}$

$\frac{41}{7} - \frac{17}{5} \Rightarrow \frac{41\times5-17\times7}{35}$

$= \frac{205-119}{35} \Rightarrow \frac{86}{35}$

$= 2\frac{16}{35}$ Liter Ans.

Weight of chicken $= 3\frac{1}{2} = \frac{7}{2}kg$

Weight of fish $= 1\frac{1}{2} = \frac{3}{2}kg$

Weight of mutton $= 2\frac{1}{4} = \frac{9}{4}kg$

Weight of total meat $= \frac{7}{2} + \frac{3}{2} + \frac{9}{4}$

$= \frac{7\times2+3\times2+9\times1}{4}$

$= \frac{14+6+9}{4} = \frac{29}{4}$

$= 7\frac{1}{4}$ Kg Ans.

$4\overline{)29}\ 7$, -28, 1

8. Omair exercises for $2\frac{1}{5}$ hours daily. How many hours will he exercise in 30 days?

Omair exercise daily $2\frac{1}{5}h$

Omair exercise in 30 days= $2\frac{1}{5}\times30 =$

$\frac{11}{\cancel{5}_1}\times\frac{\cancel{30}^{6}}{1} = 11\times6 =$

66 Hours

9. The length of a side of a square is $1\frac{7}{8}$. If the perimeter of square is 4 x length of a side, find the perimeter of a square. Also, verify your answer by adding this length four times.

length of a side = $1\frac{7}{8}$

Length of a side of square= $1\frac{7}{8}$ m

Perimeter of square = side x 4 $\quad 1\frac{7}{8}\times 4 \Rightarrow \frac{15}{\cancel{8}_{2}}\times \cancel{4}^{1} =$

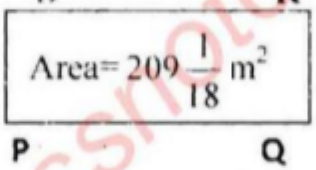
$\frac{15}{2} = 7\frac{1}{2}$ Meter Ans.

Verification:

$1\frac{7}{8}+1\frac{7}{8}+1\frac{7}{8}+1\frac{7}{8} \quad = \frac{15}{8}+\frac{15}{8}+\frac{15}{8}+\frac{15}{8} \Rightarrow \frac{\cancel{60}^{15}}{\cancel{8}} = \frac{15}{2} = 7\frac{1}{2}$

.....

10. The area of a room is $209\frac{1}{18}$ m². If the length of the room is $17\frac{2}{3}$ m, find the width of the room.



Area of a room = $209\frac{1}{18}$ m²

Hint; The area of the room is calculated by multiplying its length and width.

Area of a room= $209\frac{1}{18}$ m² $\quad$ Length of room= $17\frac{2}{3}$ m

Width of a room =

Width = $\frac{A}{L}$ $\quad 209\frac{1}{18}\div 17\frac{2}{3} = \frac{3763}{18}\div\frac{53}{3}$

$= \frac{\cancel{3763}^{71}}{\cancel{18}_{1}}\times\frac{\cancel{3}^{1}}{\cancel{53}_{1}} \Rightarrow \frac{71}{6} = 11\frac{5}{6}$ m Ans

.....

Unit No: 4	Decimals and percentage Exercise 1

(1)Compare the following decimals using the(<,> or =)

(a)0.4 < 0.5.	(b)1.3 < 1.6	(c)34.56 < 35.66
(d)6.67 < 6.69	(e)0.45 = 0.45	(f)23.12 < 51.31
(g)71.2 > 71.02	(h)6.06 < 6.1	(i)4.8 = 4.80

(2)Write the following decimals in descending order.

(a)2.51,3.31,2.47,3.81,3.01	(b)4.32,4.68,0.31,4.23,4.31

Perimeter of square = side x 4 $\quad 1\frac{7}{8}\times 4 \Rightarrow \frac{15}{\cancel{8}_{2}}\times \cancel{4}^{1} =$

$\frac{15}{2} = 7\frac{1}{2}$ Meter Ans.

Verification:

$1\frac{7}{8}+1\frac{7}{8}+1\frac{7}{8}+1\frac{7}{8} \quad = \frac{15}{8}+\frac{15}{8}+\frac{15}{8}+\frac{15}{8} \Rightarrow \frac{\cancel{60}^{15}}{\cancel{8}} = \frac{15}{2} = 7\frac{1}{2}$

.....

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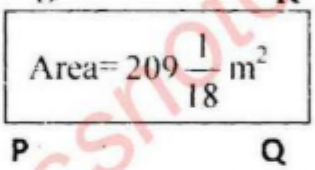

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Width of a room =

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