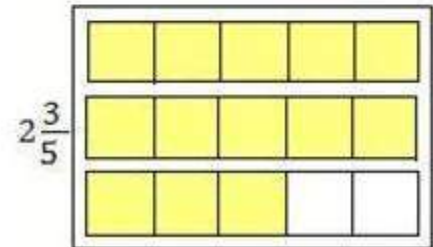
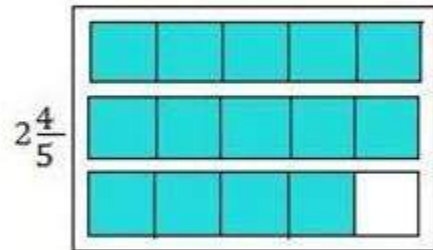
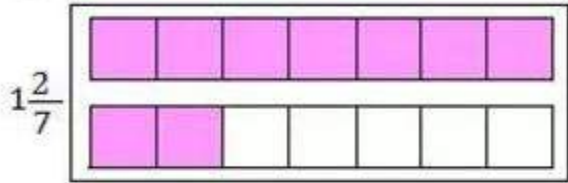
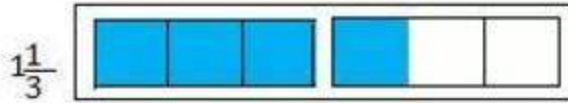


Fractions




Activity

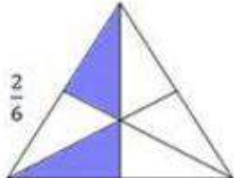

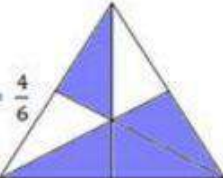
Solution 1:



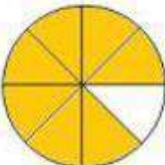


Solution 2:

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

3) $\frac{3}{8}$  $+$ $\frac{3}{8}$  $=$ $\frac{6}{8}$ 

4) $\frac{2}{6}$  $+$ $\frac{2}{6}$  $=$ $\frac{4}{6}$ 

5) $\frac{5}{6} - \frac{2}{6}$  $=$ $\frac{3}{6}$

6) $\frac{7}{8}$  $-$ $\frac{2}{8}$  $=$ $\frac{5}{8}$ 

Exercise

Solution 1:

(1) $\frac{3}{5} + \frac{2}{4} = \frac{3 \times 4}{5 \times 4} + \frac{2 \times 5}{4 \times 5} = \frac{12}{20} + \frac{10}{20} = \frac{22}{20} = \frac{11}{10} = 1\frac{1}{10}$

(2) $\frac{4}{7} + 6 = \frac{4}{7} + \frac{6}{1} = \frac{4}{7} + \frac{6 \times 7}{1 \times 7} = \frac{4}{7} + \frac{42}{7} = \frac{4 + 42}{7} = \frac{46}{7} = 6\frac{4}{7}$

(3) $\frac{3}{8} + 1\frac{2}{4} = \frac{3}{8} + \frac{6}{4} = \frac{3}{8} + \frac{6 \times 2}{4 \times 2} = \frac{3}{8} + \frac{12}{8} = \frac{3 + 12}{8} = \frac{15}{8} = 1\frac{7}{8}$

(4) $2\frac{1}{5} + 3\frac{3}{5} + 2\frac{1}{3} = \frac{11}{5} + \frac{18}{5} + \frac{7}{3} = \frac{11 + 18}{5} + \frac{7}{3} = \frac{29 \times 3}{5 \times 3} + \frac{7 \times 5}{3 \times 5} = \frac{77}{15} + \frac{35}{15} = \frac{112}{15} = 7\frac{7}{15}$

Solution 2:

$$(1) \frac{6}{9} - \frac{3}{18} = \frac{2}{3} - \frac{1}{6} = \frac{2 \times 2}{3 \times 2} - \frac{1}{6} = \frac{4}{6} - \frac{1}{6} = \frac{4-1}{6} = \frac{3}{6} = \frac{1}{2}$$

$$(2) 8 - 3\frac{5}{9} = 8 - \frac{32}{9} = \frac{8 \times 9}{1 \times 9} - \frac{32}{9} = \frac{72}{9} - \frac{32}{9} = \frac{72-32}{9} = \frac{40}{9} = 4\frac{4}{9}$$

$$(3) 4 - \frac{5}{11} = \frac{4 \times 11}{1 \times 11} - \frac{5}{11} = \frac{44}{11} - \frac{5}{11} = \frac{44-5}{11} = \frac{39}{11} = 3\frac{6}{11}$$

$$(4) 8\frac{1}{2} - 5\frac{7}{8} = \frac{17}{2} - \frac{47}{8} = \frac{17 \times 4}{2 \times 4} - \frac{47}{8} = \frac{68}{8} - \frac{47}{8} = \frac{68-47}{8} = \frac{21}{8} = 2\frac{5}{8}$$

Solution 3:

$$(1) \frac{6}{15} \times \frac{5}{18} = \frac{3 \times 2}{3 \times 5} \times \frac{5}{3 \times 3 \times 2} = \frac{1}{9}$$

$$(2) \frac{3}{8} \times \frac{16}{21} = \frac{3}{8} \times \frac{2 \times 8}{3 \times 7} = \frac{2}{7}$$

$$(3) \frac{9}{10} \times \frac{5}{7} \times \frac{14}{25} = \frac{9}{2 \times 5} \times \frac{5}{7} \times \frac{7 \times 2}{5 \times 5} = \frac{9}{25}$$

$$(4) 8 \times \frac{3}{19} \times \frac{38}{56} = \frac{8}{1} \times \frac{3}{19} \times \frac{19 \times 2}{7 \times 8} = \frac{6}{7}$$

Solution 4:

$$(1) \frac{18}{81} \div \frac{36}{45} = \frac{18}{81} \times \frac{45}{36} = \frac{18}{9 \times 9} \times \frac{9 \times 5}{18 \times 2} = \frac{5}{18}$$

$$(2) 4\frac{1}{5} \div \frac{42}{50} = \frac{21}{5} \times \frac{50}{42} = \frac{21}{5} \times \frac{2 \times 5 \times 5}{21 \times 2} = 5$$

$$(3) 9\frac{2}{7} \div 4\frac{1}{3} = \frac{65}{7} \div \frac{13}{3} = \frac{65}{7} \times \frac{3}{13} = \frac{13 \times 5}{7} \times \frac{3}{13} = \frac{15}{7} = 2\frac{1}{7}$$

$$(4) \frac{72}{7} \div 2\frac{18}{21} = \frac{72}{7} \div \frac{60}{21} = \frac{72}{7} \times \frac{21}{60} = \frac{12 \times 6}{7} \times \frac{7 \times 3}{12 \times 5} = \frac{18}{5} = 3\frac{3}{5}$$

Solution 5:

$$(1) \frac{17}{13} \times \frac{13}{17} - \frac{1}{5}$$

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

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

$$(2) \frac{2}{5} + \frac{6}{10} \div \frac{24}{15}$$

$$= \frac{2}{5} + \frac{6}{10} \times \frac{15}{24}$$

$$= \frac{2}{5} + \frac{3}{8} = \frac{2 \times 8}{5 \times 8} + \frac{3 \times 5}{8 \times 5} = \frac{16+15}{40} = \frac{31}{40}$$

$$(3) \frac{9}{4} \times 3\frac{4}{5} \div 5\frac{2}{11}$$

$$= \frac{9}{4} \times \frac{19}{5} \div \frac{57}{11}$$

$$= \frac{9}{4} \times \frac{19}{5} \times \frac{11}{57} = \frac{3}{4} \times \frac{1}{5} \times \frac{11}{1} = \frac{33}{20} = \frac{13}{20}$$

$$(4) \frac{16}{9} \div \frac{48}{45} - \frac{2}{7}$$

$$= \frac{16}{9} \times \frac{9 \times 5}{16 \times 3} - \frac{2}{7}$$

$$= \frac{5}{3} - \frac{2}{7} = \frac{5 \times 7}{3 \times 7} - \frac{2 \times 3}{7 \times 3} = \frac{35}{21} - \frac{6}{21} = \frac{29}{21} = 1\frac{8}{21}$$

Practice – 1

Solution 1(1):

To add the fractions, convert them into like fractions.

To convert the fractions into like fractions, find the L.C.M of the denominators.

Then multiply the numerator by the same number,
as done below :

$$\frac{3}{4} + \frac{5}{8} = \frac{3 \times 2}{4 \times 2} + \frac{5}{8}$$

(converting to like fractions)

$$= \frac{6}{8} + \frac{5}{8}$$

$$= \frac{6+5}{8}$$

$$= \frac{11}{8} = 11 \div 8$$

$$= 1\frac{3}{8}$$

2	4	8
2	2	4
2	1	2
	1	1

L.C.M. of 4 and 8 is 8.

Hence, multiply the denominator by the
number so as to get 8 in the denominator.

Solution 1(2):

To add the fractions, convert them into like fractions.

To convert the fractions into like fractions, find the L.C.M of the denominators.

Then multiply the numerator by the same number,
as done below :

$$\frac{2}{5} + \frac{3}{7} = \frac{2 \times 7}{5 \times 7} + \frac{3 \times 5}{7 \times 5}$$

(converting to like fractions)

$$= \frac{14}{35} + \frac{15}{35}$$

$$= \frac{14+15}{35}$$

$$= \frac{29}{35}$$

5	5	7
7	1	7
	1	1

L.C.M. of 5 and 7 is 35.

Hence, multiply the denominator by the
number so as to get 35 in the
denominator.

Solution 1(3):

To add the fractions, first convert them into mixed fractions and then like fractions.

$$\therefore 2\frac{3}{4} + 1\frac{2}{3} = \frac{11}{4} + \frac{5}{3}$$

(converting mixed fractions into improper fractions)

To convert these fractions into like fractions, find the L.C.M. of the denominators.

Then multiply the numerator by the same number, as done below :

$$\begin{aligned} 2\frac{3}{4} + 1\frac{2}{3} \\ &= \frac{11}{4} + \frac{5}{3} \\ &= \frac{11 \times 3}{4 \times 3} + \frac{5 \times 4}{3 \times 4} \end{aligned}$$

(converting to like fractions)

$$\begin{aligned} &= \frac{33}{12} + \frac{20}{12} \\ &= \frac{33+20}{12} \\ &= \frac{53}{12} = 4\frac{5}{12} \end{aligned}$$

2	4	3
2	2	3
3	1	3
	1	1

L.C.M. of 4 and 3 is 12.

Hence, multiply the denominator by the number so as to get 12 in the denominator.

Solution 1(4):

To add the fractions, first convert them into mixed fractions and then like fractions.

$$\therefore 2\frac{3}{4} + 1\frac{2}{3} = \frac{11}{4} + \frac{5}{3}$$

(converting mixed fractions into improper fractions)

To convert these fractions into like fractions, find the L.C.M of the denominators.

Then multiply the numerator by the same number, as done below :

$$\begin{aligned} 2\frac{3}{4} + 1\frac{2}{3} \\ &= \frac{11}{4} + \frac{5}{3} \\ &= \frac{11 \times 3}{4 \times 3} + \frac{5 \times 4}{3 \times 4} \end{aligned}$$

(converting to like fractions)

$$\begin{aligned} &= \frac{33}{12} + \frac{20}{12} \\ &= \frac{33+20}{12} \\ &= \frac{53}{12} = 4\frac{5}{12} \end{aligned}$$

2	4	3
2	2	3
3	1	3
	1	1

L.C.M. of 4 and 3 is 12.

Hence, multiply the denominator by the number so as to get 12 in the denominator.

Solution 1(5):

$$\begin{aligned} & 2\frac{5}{8} + \frac{7}{16} \\ &= \frac{21}{8} + \frac{7}{16} \\ &= \frac{21 \times 2}{8 \times 2} + \frac{7}{16} \\ &= \frac{42 + 7}{16} = \frac{49}{16} \\ &= 3\frac{1}{16} \end{aligned}$$

L.C.M of 8 and 16 is 16.

Hence, multiply the denominator of the first fraction by the number so as to get 16 in the denominator.

Solution 1(6):

$$\begin{aligned} & \frac{3}{4} + \frac{1}{6} + \frac{5}{12} \\ & \text{(L.C.M. of 4, 6 and 12 is, 12)} \\ & \therefore \frac{3}{4} + \frac{1}{6} + \frac{5}{12} \\ &= \frac{3 \times 3}{4 \times 3} + \frac{1 \times 2}{6 \times 2} + \frac{5}{12} \\ &= \frac{9 + 2 + 5}{12} \\ &= \frac{16}{12} = \frac{4 \times \cancel{4}}{3 \times \cancel{4}} \\ &= \frac{4}{3} = 1\frac{1}{3} \end{aligned}$$



Solution 2:

Let us add $2\frac{3}{4}$ and $2\frac{1}{4}$

$$\begin{aligned} 2\frac{3}{4} + 2\frac{1}{4} \\ = \frac{11}{4} + \frac{9}{4} \\ = \frac{11+9}{4} \\ = \frac{20}{4} \\ = 5 \end{aligned}$$

Let us add $1\frac{3}{8}$ and $2\frac{3}{4}$

$$\begin{aligned} 1\frac{3}{8} + 2\frac{3}{4} \\ = \frac{11}{8} + \frac{11}{4} \\ = \frac{11}{8} + \frac{11 \times 2}{4 \times 2} \\ = \frac{11}{8} + \frac{22}{8} \\ = \frac{11+22}{8} \\ = \frac{33}{8} = 4\frac{1}{8} \end{aligned}$$

Game- Board				
$3\frac{1}{2}$		$6\frac{1}{4}$	$4\frac{7}{8}$	$3\frac{5}{8}$
$2\frac{3}{4}$	$3\frac{3}{4}$	$6\frac{3}{8}$	$6\frac{1}{8}$	7
6	$4\frac{1}{4}$		$2\frac{7}{8}$	$2\frac{5}{8}$
$3\frac{3}{8}$	$4\frac{3}{8}$	$5\frac{3}{4}$	4	$6\frac{7}{8}$
$5\frac{7}{8}$	$7\frac{1}{2}$	$8\frac{3}{8}$	$5\frac{1}{8}$	

Practice – 2

Solution 1(1):

Denominators of both the fractions are different, so convert them into like fractions and then subtract.

$$3\frac{1}{5} - 2\frac{3}{10}$$

$$= \frac{16}{5} - \frac{23}{10}$$

(LCM of 5 and 10 is 10.)

$$\therefore \frac{16 \times 2}{5 \times 2} - \frac{23}{10}$$

$$= \frac{32}{10} - \frac{23}{10}$$

$$= \frac{32 - 23}{10}$$

$$= \frac{9}{10}$$

Solution 1(2):

Denominators of both the fractions are different, so convert them into like fractions and then subtract.

$$5 - \frac{4}{11}$$

$$= \frac{5}{1} - \frac{4}{11}$$

(LCM of 1 and 11 is 11)

$$= \frac{5 \times 11}{1 \times 11} - \frac{4}{11}$$

$$= \frac{55}{11} - \frac{4}{11}$$

$$= \frac{51}{11}$$

$$= 4\frac{7}{11}$$

Solution 1(3):

Denominators of both the fractions are different, so convert them into like fractions and then subtract.

$$\begin{aligned} & \frac{7}{2} - \frac{6}{13} \\ & \text{(LCM of 2 and 13 is 26)} \\ & = \frac{7 \times 13}{2 \times 13} - \frac{6 \times 2}{13 \times 2} \\ & = \frac{91}{26} - \frac{12}{26} \\ & = \frac{91 - 12}{26} \\ & = \frac{79}{26} \\ & = 3\frac{1}{26} \end{aligned}$$

Solution 1(4):

Denominators of both the fractions are different, so convert them into like fractions and then subtract.

$$\begin{aligned} & 5\frac{13}{20} - 4\frac{3}{10} \\ & = \frac{113}{20} - \frac{43}{10} \\ & \text{(LCM of 20 and 10 is 20)} \\ & = \frac{113}{20} - \frac{43 \times 2}{10 \times 2} \\ & = \frac{113}{20} - \frac{86}{20} \\ & = \frac{113 - 86}{20} \\ & = \frac{27}{20} \\ & = 1\frac{7}{20} \end{aligned}$$

Solution 1(5):

Denominators of both the fractions are different, so convert them into like fractions and then subtract.

$$\begin{aligned} & 7 - 3\frac{5}{9} \\ &= \frac{7}{1} - \frac{32}{9} \\ & \text{(LCM of 1 and 9 is 9)} \\ &= \frac{7 \times 9}{1 \times 9} - \frac{32}{9} \\ &= \frac{63}{9} - \frac{32}{9} \\ &= \frac{31}{9} \\ &= 3\frac{4}{9} \end{aligned}$$

Solution 1(6):

Denominators of both the fractions are different, so convert them into like fractions and then subtract.

$$\begin{aligned} & 7\frac{1}{2} - 2\frac{3}{4} \\ &= \frac{15}{2} - \frac{11}{4} \\ & \text{(LCM of 2 and 4 is 4)} \\ &= \frac{15 \times 2}{2 \times 2} - \frac{11}{4} \\ &= \frac{30}{4} - \frac{11}{4} \\ &= \frac{19}{4} \\ &= 4\frac{1}{4} \end{aligned}$$

Solution 2:

Calculations: Table I

$$\begin{aligned}
 (1) \quad & \frac{2}{8} + \frac{4}{8} = \frac{2+4}{8} = \frac{6}{8} \\
 (2) \quad & \frac{1}{8} + \frac{2}{8} = \frac{1+2}{8} = \frac{3}{8} \\
 (3) \quad & \frac{2}{8} - \frac{1}{8} = \frac{2-1}{8} = \frac{1}{8} \\
 (4) \quad & \frac{4}{8} - \frac{2}{8} = \frac{4-2}{8} = \frac{2}{8} \\
 (5) \quad & \frac{6}{8} - \frac{3}{8} = \frac{6-3}{8} = \frac{3}{8}
 \end{aligned}$$

Table I

$\xrightarrow{\quad \oplus \quad}$		
$\frac{2}{8}$	$\frac{4}{8}$	$\frac{6}{8}$
$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$
$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$

Calculations: Table II

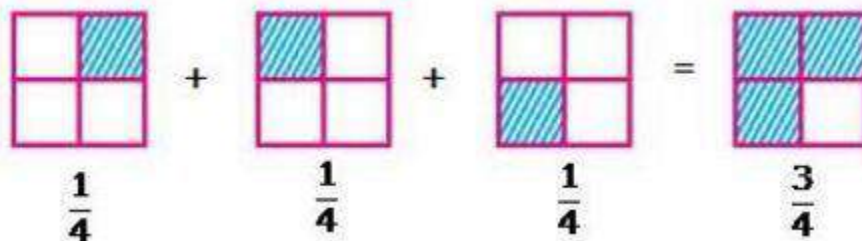
$$\begin{aligned}
 (1) \quad & \frac{1}{2} + \frac{1}{3} = \frac{1 \times 3}{2 \times 3} + \frac{1 \times 2}{3 \times 2} = \frac{3+2}{6} = \frac{5}{6} \\
 (2) \quad & \frac{1}{3} + \frac{1}{4} = \frac{1 \times 4}{3 \times 4} + \frac{1 \times 3}{4 \times 3} = \frac{4+3}{12} = \frac{7}{12} \\
 (3) \quad & \frac{1}{2} - \frac{1}{3} = \frac{1 \times 3}{2 \times 3} - \frac{1 \times 2}{3 \times 2} = \frac{3-2}{6} = \frac{1}{6} \\
 (4) \quad & \frac{1}{3} - \frac{1}{4} = \frac{1 \times 4}{3 \times 4} - \frac{1 \times 3}{4 \times 3} = \frac{4-3}{12} = \frac{1}{12} \\
 (5) \quad & \frac{1}{6} + \frac{1}{12} = \frac{1 \times 2}{6 \times 2} + \frac{1}{12} = \frac{2+1}{12} = \frac{3}{12} \\
 (6) \quad & \frac{5}{6} - \frac{7}{12} = \frac{5 \times 2}{6 \times 2} - \frac{7}{12} = \frac{10-7}{12} = \frac{3}{12}
 \end{aligned}$$

Table II

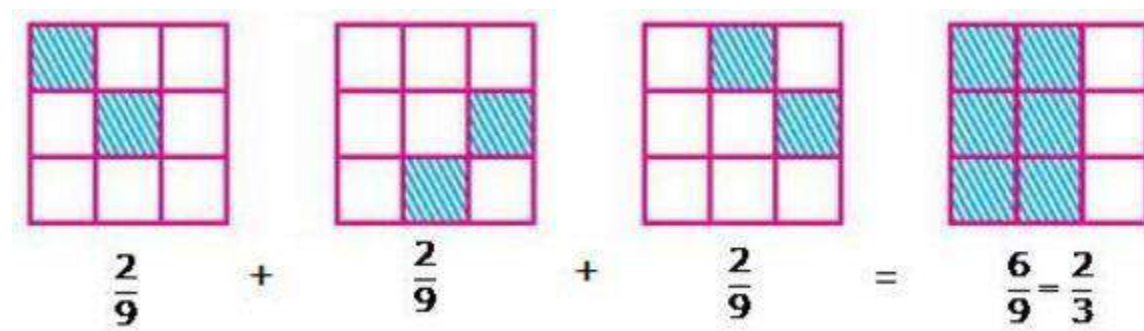
$\xrightarrow{\quad \oplus \quad}$		
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{5}{6}$
$\frac{1}{3}$	$\frac{1}{4}$	$\frac{7}{12}$
$\frac{1}{6}$	$\frac{1}{12}$	$\frac{3}{12}$

Practice – 3

Solution 1:



Solution 2:



Solution 3:

$$3 \times \frac{2}{5} = \frac{3}{1} \times \frac{2}{5} = \frac{3 \times 2}{5 \times 1} = \frac{6}{5} = 1\frac{1}{5}$$

Solution 4:

$$4 \times \frac{3}{7} = \frac{4}{1} \times \frac{3}{7} = \frac{4 \times 3}{1 \times 7} = \frac{12}{7} = 1\frac{5}{7}$$

Solution 5:

$$3 \times \frac{5}{8} = \frac{3}{1} \times \frac{5}{8} = \frac{3 \times 5}{1 \times 8} = \frac{15}{8} = 1\frac{7}{8}$$

Practice – 4

Solution 1:

$$(1) 18 \div 6 = 18 \times \frac{1}{6} = \frac{18}{1} \times \frac{1}{6} = \frac{6 \times 3}{1} \times \frac{1}{6} = 3$$

$$(2) \frac{6}{7} \div 3 = \frac{6}{7} \times \frac{1}{3} = \frac{2 \times 3}{7} \times \frac{1}{3} = \frac{2}{7}$$

$$(3) \frac{5}{7} \div \frac{5}{14} = \frac{5}{7} \times \frac{7 \times 2}{5} = 2$$

$$(4) \frac{3}{5} \div \frac{2}{3} = \frac{3}{5} \times \frac{3}{2} = \frac{9}{10}$$

$$(5) \frac{7}{8} \div 1\frac{1}{4} = \frac{7}{8} \div \frac{5}{4} = \frac{7}{8} \times \frac{4}{5} = \frac{7}{4 \times 2} \times \frac{4}{5} = \frac{7}{2} \times \frac{1}{5} = \frac{7}{10}$$

$$(6) 2\frac{1}{5} \div \frac{22}{5} = \frac{11}{5} \times \frac{5}{22} = \frac{11}{22} = \frac{11}{11 \times 2} = \frac{1}{2}$$

$$(7) 3\frac{1}{5} \div \frac{6}{8} = \frac{16}{5} \times \frac{8}{6} = \frac{2 \times 8}{5} \times \frac{8}{2 \times 3} = \frac{8 \times 8}{5 \times 3} = \frac{64}{15} = 4\frac{4}{15}$$

$$(8) 2\frac{1}{6} \div 3\frac{5}{7} = \frac{13}{6} \div \frac{26}{7} = \frac{13}{6} \times \frac{7}{26} = \frac{13}{6} \times \frac{7}{2 \times 13} = \frac{7}{6 \times 2} = \frac{7}{12}$$

Practice – 5

Solution 1:

To simplify the four basic operations on fractions, the hierarchy of DMAS, first carry out all divisions, then multiplication and after that additions and subtractions.

$$\begin{aligned} & 3\frac{2}{5} + 1\frac{3}{6} \times \frac{15}{9} \\ &= \frac{17}{5} + \frac{9}{6} \times \frac{15}{9} \\ &= \frac{17}{5} + \frac{9}{6} \times \frac{15}{9} \\ &= \frac{17}{5} + \frac{5}{2} \\ &= \frac{17 \times 2}{5 \times 2} + \frac{5 \times 5}{2 \times 5} \\ &= \frac{34 + 25}{10} \\ &= \frac{59}{10} \\ &= 5\frac{9}{10} \end{aligned}$$

Solution 2:

To simplify the four basic operations on fractions, the hierarchy of DMAS, first carry out all divisions, then multiplication and after that additions and subtractions.

$$\begin{aligned}& \frac{9}{12} - \frac{18}{24} \times \frac{7}{24} + \frac{2}{6} \\& \therefore \frac{9}{12} - \frac{18}{24} \times \frac{7}{24} + \frac{2}{6} \\& = \frac{3}{4} - \frac{6 \times 3}{6 \times 4} \times \frac{7}{6 \times 4} + \frac{2}{6} \\& = \frac{3}{4} - \frac{3 \times 7}{4 \times 6 \times 4} + \frac{2}{6} \\& = \frac{3}{4} - \frac{21}{96} + \frac{2}{6} \\& = \frac{3 \times 24}{4 \times 24} - \frac{21}{96} + \frac{2 \times 16}{6 \times 16} \\& = \frac{72 - 21 + 32}{96} \\& = \frac{83}{96}\end{aligned}$$

Solution 3:

To simplify the four basic operations on fractions, the hierarchy of DMAS, first carry out all divisions, then multiplication and after that additions and subtractions.

$$\begin{aligned}& 5\frac{2}{8} \div \frac{2}{14} + \frac{5}{7} \\& = 5\frac{1}{4} \div \frac{1}{7} + \frac{5}{7} \\& = \frac{21}{4} \times \frac{7}{1} + \frac{5}{7} \\& = \frac{147}{4} + \frac{5}{7} \\& = \frac{1029 + 20}{28} = \frac{1049}{28} = 37\frac{13}{28}\end{aligned}$$

[Note : Answer provided by the textbook is for $5\frac{2}{8} \times \frac{2}{14} + \frac{5}{7} = 1\frac{13}{28}$]

Solution 4:

To simplify the four basic operations on fractions, the hierarchy of DMAS, first carry out all divisions, then multiplication and after that additions and subtractions.

$$4\frac{2}{3} - 9\frac{3}{5} + 2\frac{2}{15}$$

$$4\frac{2}{3} - 9\frac{3}{5} + 2\frac{2}{15}$$

$$= \frac{14}{3} - \frac{48}{5} + \frac{32}{15}$$

$$= \frac{14}{3} - \frac{48}{5} \times \frac{15}{32}$$

$$= \frac{14}{3} - \frac{\cancel{16} \times 3}{\cancel{8}} \times \frac{3 \times \cancel{8}}{\cancel{16} \times 2}$$

$$= \frac{14}{3} - \frac{9}{2}$$

$$= \frac{14 \times 2}{3 \times 2} - \frac{9 \times 3}{2 \times 3}$$

$$= \frac{28 - 27}{6}$$

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

Solution 5:

To simplify the four basic operations on fractions, the hierarchy of DMAS, first carry out all divisions, then multiplication and after that additions and subtractions.

$$\begin{aligned} & \frac{6}{7} \times 2\frac{4}{5} - \frac{2}{11} \times 8\frac{1}{4} \\ & \frac{6}{7} \times 2\frac{4}{5} - \frac{2}{11} \times 8\frac{1}{4} \\ & = \frac{6}{7} \times \frac{14}{5} - \frac{2}{11} \times \frac{33}{4} \\ & = \frac{\cancel{6} \times \cancel{7} \times 2}{\cancel{7} \times 5} - \frac{\cancel{2} \times \cancel{11} \times 3}{\cancel{11} \times \cancel{4} \times 2} \\ & = \frac{12}{5} - \frac{3}{2} \\ & = \frac{12 \times 2}{5 \times 2} - \frac{3 \times 5}{2 \times 5} \\ & = \frac{24}{10} - \frac{15}{10} \\ & = \frac{24 - 15}{10} \\ & = \frac{9}{10} \end{aligned}$$

Solution 6:

To simplify the four basic operations on fractions, the hierarchy of DMAS, first carry out all divisions, then multiplication and after that additions and subtractions.

$$\frac{9}{3} \div \frac{4}{6} \times \frac{13}{18} - \frac{3}{5}$$

$$3 \div \frac{2}{3} \times \frac{13}{18} - \frac{3}{5}$$

$$= \frac{\cancel{3} \times \cancel{3} \times \frac{13}{\cancel{3} \times \cancel{3} \times 2}}{1 \times 2} - \frac{3}{5}$$

$$= \frac{13}{4} - \frac{3}{5}$$

$$= \frac{13 \times 5}{4 \times 5} - \frac{3 \times 4}{5 \times 4}$$

$$= \frac{65}{20} - \frac{12}{20}$$

$$= \frac{65 - 12}{20}$$

$$= \frac{53}{20}$$

$$= 2\frac{13}{10}$$