SNBP International & Sr. Secondary School, Chikhali, Pune.

Affiliation No. 1130703

Academic session 2024-25

Notes-(Term-2)

Sub-math

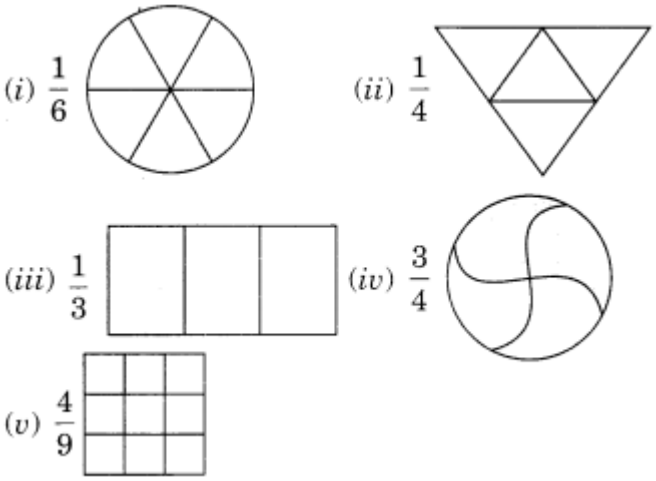
Prepared by -Pranjali Patil L-7 Fractions

Ex-7.1

Q-1

Solution:
(i) Total number of parts = 4
Number of shaded parts = 2
∴ Fraction = 24
(ii) Total number of parts = 9
Number of shaded parts = 8
∴ Fraction = 89
(iii) Total number of parts = 8
Number of shaded parts = 4
∴ Fraction = 48
iv) Total number of parts = 4
Number of shaded parts = 1
∴ Fraction = 14
(v) Total number of parts = 7
Number of shaded parts = 3
∴ Fraction = 37
(vi) Total number of parts = 12
Number of shaded parts = 3
∴ Fraction = 312
Solution:
(vii) Total number of parts = 10
Number of shaded parts = 10
∴ Fraction = 1010
(viii) Total number of parts = 9
Number of shaded parts = 4
∴ Fraction = 49
(ix) Total number of parts = 8
Number of shaded parts = 4
∴ Fraction = 48

(x) Total number of parts = 2
Number of shaded part = 1
∴ Fraction = 12
Q-2 Solution:



Q-3

solution:
(a) Since the shaded part is not half.
∴ This is not 12.
(b) Since, the parts are not equal.
∴ Shaded part is not 14 .
(c) Since, the part are not equal.
∴ Shaded part is not 34.

Question 4.
Solution:
Since, a day has 24 hours and we have 8 hours,
∴ Required fraction = 824
Question 5.

Solution:
Since I hours = 60 minutes
∴ Fraction of 40 minutes = 4060
Q-6

Solution:
(a) Arya has divided his sandwich into three equal parts.
So, each of them will get one part.
(b) Each one of them will receive 13 part.
Q-7

Solution:
Total number of dresses to be dyed = 30
Number of dresses finished = 20
∴ Required fraction = 2030 = 23 Required fraction = 13

Q-8

Solution:
Natural numbers between 2 and 12 are;
2,3,4, 5, 6, 7, 8, 9, 10,11, 12
Number of given natural numbers = 11
Number of prime numbers = 5
∴ Required fraction = 511

Q-9

Solution:
Natural numbers from 102 to 113 are;
102,103,104,105,106, 107,108, 109,110, 111, 112,113
Total number of given natural numbers = 12
Prime numbers are 103, 107, 109, 113
∴ Number of prime numbers = 4
∴ Required fraction = 412 = 13

Q-10

Solution:
Total number'of circles = 8
Number of circles having X's in them = 4
Required fraction = 48 = 12

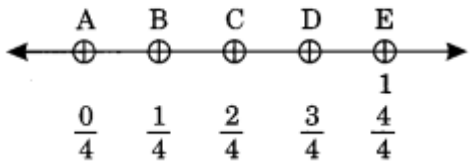
Q-11

Solution:
Number of CDs bought by her from the market = 3
Number of CD's received as gifts = 5
∴ Total number of CDs = 3 + 5 = 8
∴ Fraction of CD (bought) = 38 and the fraction of CDs (gifted) = 58

Ex 7.2 Class 6 Maths Question 1.

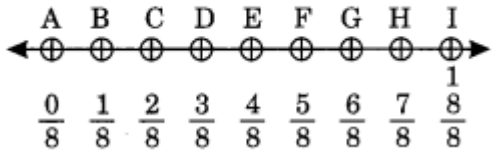
Solution:

$(a)\ \frac{1}{2}, \frac{1}{4}, \frac{3}{4}, \frac{4}{4}$



We have divided the number line from 0 to 1 into four equal parts.
C represents 24 i,e., 12
B represents 14
D represents 34
and E represents 44 , i.e., 1.

(b) $\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{7}{8}$



We have divided the number line from 0 to 1 into eight equal parts.
B represents 18
C represents 28
D represents 38
and H represents 78

(c) $\frac{2}{5}, \frac{3}{5}, \frac{8}{5}, \frac{4}{5}$

From the above number line, we have
C represents 25
D represents 35
E represents 45
and I represents 85

Ex 7.2 Class 6 Maths Question 2.
Express the following as mixed fractions:

(a) $\frac{20}{3}$ (b) $\frac{11}{5}$ (c) $\frac{17}{7}$

(d) $\frac{28}{5}$ (e) $\frac{19}{6}$ (f) $\frac{35}{9}$

Solution:

(a) $\frac{20}{3}$

We have,

$$\begin{array}{r} 3\overline{)20(}\,6 \\ -18 \\ \hline 2 \end{array}$$

$\therefore \frac{20}{3} = 6\frac{2}{3}$

(b) $\frac{11}{5}$

We have,

$$\begin{array}{r} 5\overline{)11(}\,2 \\ -10 \\ \hline 1 \end{array}$$

$\therefore \frac{11}{5} = 2\frac{1}{5}$

(c) $\frac{17}{7}$

We have,

$$\begin{array}{r} 7\overline{)17(}\,2 \\ -14 \\ \hline 3 \end{array}$$

$\therefore \frac{17}{7} = 2\frac{3}{7}$

(d) $\frac{28}{5}$

We have,

$$\begin{array}{r} 5\overline{)28}(5 \\ -25 \\ \hline 3 \end{array}$$

$\therefore \frac{28}{5} = 5\frac{3}{5}$

(e) $\frac{19}{6}$

We have,

$$\begin{array}{r} 6\overline{)19}(3 \\ -18 \\ \hline 1 \end{array}$$

$\therefore \frac{19}{6} = 3\frac{1}{6}$

(f) $\frac{35}{9}$

We have,

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

$\therefore \frac{35}{9} = 3\frac{8}{9}$

Ex 7.2 Class 6 Maths Question 3.
Express the following as improper fractions:

(a) $7\frac{3}{4}$ (b) $5\frac{6}{7}$ (c) $2\frac{5}{6}$

(d) $10\frac{3}{5}$ (e) $9\frac{3}{7}$ (f) $8\frac{4}{9}$

(a) $7\frac{3}{4} = \frac{7\times4+3}{4} = \frac{31}{4}$ $\therefore$ $7\frac{3}{4} = \frac{31}{4}$

(b) $5\frac{6}{7} = \frac{5\times7+6}{7} = \frac{41}{7}$ $\therefore$ $5\frac{6}{7} = \frac{41}{7}$

(c) $2\frac{5}{6} = \frac{2\times6+5}{6} = \frac{17}{6}$ $\therefore$ $2\frac{5}{6} = \frac{17}{6}$

(d) $10\frac{3}{5} = \frac{10\times5+3}{5} = \frac{53}{5}$ $\therefore$ $10\frac{3}{5} = \frac{53}{5}$

(e) $9\frac{3}{7} = \frac{9\times7+3}{7} = \frac{66}{7}$ $\therefore$ $9\frac{3}{7} = \frac{66}{7}$

(f) $8\frac{4}{9} = \frac{8\times9+4}{9} = \frac{76}{9}$ $\therefore$ $8\frac{4}{9} = \frac{76}{6}$

Ex-7.3
Solution:

(a) (i) Shaded part $= \frac{1}{2}$

(ii) Shaded part $= \frac{2}{4} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$

(iii) Shaded part $= \frac{3}{6} = \frac{3 \div 3}{6 \div 3} = \frac{1}{2}$

(iv) Shaded part $= \frac{4}{8} = \frac{4 \div 4}{8 \div 4} = \frac{1}{2}$

$\therefore$ All fractions are equivalent.

(b) (i) Shaded part$= \frac{4}{12} = \frac{4 \div 4}{12 \div 4} = \frac{1}{3}$

(ii) Shaded part $= \frac{3}{9} = \frac{3 \div 3}{9 \div 3} = \frac{1}{3}$

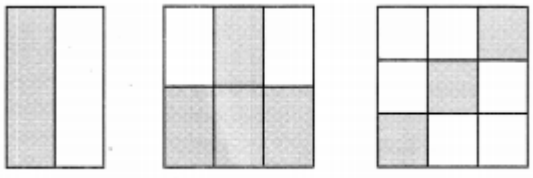
(iii) Shaded part $= \frac{2}{6} = \frac{2 \div 2}{6 \div 2} = \frac{1}{3}$

(iv) Shaded part $= \frac{1}{3}$

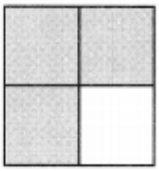
(v) Shaded part $= \frac{6}{15} = \frac{6 \div 3}{15 \div 3} = \frac{2}{5}$

Since all the fractions in their simplest form are not equal.
∴ They are not equivalent fractions.

Ex 7.3 Class 6 Maths Question 2.
Write the fractions and pair up the equivalent fractions from each row.



(d)



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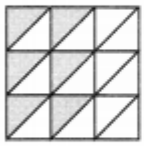
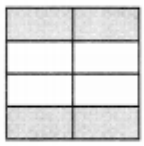
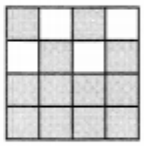


(i)

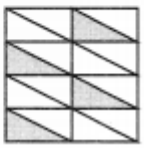


(ii)



(iii)

(iv)



(v)

Solution:

(a) $\frac{1}{2}$ (b) $\frac{4}{6}=\frac{4\div 2}{6\div 2}=\frac{2}{3}$

(c) $\frac{3}{9}=\frac{3\div 3}{9\div 3}=\frac{1}{3}$ (d) $\frac{2}{8}=\frac{2\div 2}{8\div 2}=\frac{1}{4}$

(e) $\frac{3}{4}$

(i) $\frac{6}{18}=\frac{6\div 6}{18\div 6}=\frac{1}{3}$ (ii) $\frac{4}{8}=\frac{4\div 4}{8\div 4}=\frac{1}{2}$

(iii) $\frac{12}{16}=\frac{12\div 4}{16\div 4}=\frac{3}{4}$ (iv) $\frac{8}{12}=\frac{8\div 4}{12\div 4}=\frac{2}{3}$

(v) $\frac{4}{16}=\frac{4\div 4}{16\div 4}=\frac{1}{4}$

The following pairs fractions:represent the equivalent fractions.
(a) and (ii) = 12
(b) and (iv) = 23
(c) and (i) = 13
(d) and (v) = 14
(e) and (iii) = 34

Ex 7.3 Class 6 Maths Question 3.

Replace $\square$ in each of the following by the correct number:

(a) $\frac{2}{7}=\frac{8}{\square}$ (b) $\frac{5}{8}=\frac{10}{\square}$

(c) $\frac{3}{5}=\frac{\square}{20}$ (d) $\frac{45}{60}=\frac{15}{\square}$

(e) $\frac{18}{24}=\frac{\square}{4}$

Solution:

(a) Given that: $\frac{2}{7} = \frac{8}{\square}$

$\Rightarrow \quad 2 \times \square = 7 \times 8 \quad \Rightarrow \quad \square = \frac{7 \times 8}{2} = 28$

$\therefore \quad \frac{2}{7} = \frac{8}{\boxed{28}}$

(b) Given that: $\frac{5}{8} = \frac{10}{\square} \Rightarrow 5 \times \square = 8 \times 10$

$\Rightarrow \quad \square = \frac{8 \times 10}{5} = 16$

$\therefore \quad \frac{5}{8} = \frac{10}{\boxed{16}}$

(c) Given that: $\frac{3}{5} = \frac{\square}{20} \Rightarrow 5 \times \square = 3 \times 20$

$\Rightarrow \quad \square = \frac{3 \times 20}{5} = 12$

$\therefore \quad \frac{3}{5} = \frac{\boxed{12}}{20}$

(d) Given that: $\frac{45}{60} = \frac{15}{\square} \Rightarrow 45 \times \square = 15 \times 60$

$\Rightarrow \quad \square = \frac{15 \times 60}{45} = 20$

$\therefore \quad \frac{45}{60} = \frac{15}{\boxed{20}}$

(e) Given that: $\frac{18}{24} = \frac{\square}{4} \Rightarrow 24 \times \square = 18 \times 4$

$\Rightarrow \quad \square = \frac{18 \times 4}{24} = 3$

$\therefore \quad \frac{18}{24} = \frac{\boxed{3}}{4}$

Ex 7.3 Class 6 Maths Question 4.
Find the equivalent fraction of 35 having
(a) denominator 20
(b) numerator 9
(c) denominator 30
(d) numerator 27
Solution:
(a) Here, we require denominator 20.
Let N be the numerator of the fractions.

$$\therefore \quad \frac{N}{20} = \frac{3}{5} \quad \Rightarrow \quad 5 \times N = 20 \times 3$$

$$\Rightarrow \quad N = \frac{20 \times 3}{5} = 12$$

∴ The required fraction is 1220

(b) Here, we required numerator 9.

Let D be the denominator of the fraction.

$$\therefore \quad \frac{9}{D} = \frac{3}{5} \quad \Rightarrow \quad 3 \times D = 9 \times 5$$

$$\Rightarrow \quad D = \frac{9 \times 5}{3} = 15$$

∴ The required fraction is 915.

(c) Here, we required denominator 30.

Let N be the numerator of the fraction.

$$\therefore \quad \frac{N}{30} = \frac{3}{5} \quad \Rightarrow \quad 5 \times N = 3 \times 30$$

$$\Rightarrow \quad N = \frac{3 \times 30}{5} = 18$$

∴ The required fraction is 1830.

(d) Here, we required numerator 27.

Let D be the denominator of the fraction.

$$\therefore \quad \frac{27}{D} = \frac{3}{5} \quad \Rightarrow \quad 3 \times D = 5 \times 27$$

$$\Rightarrow \quad D = \frac{5 \times 27}{3} = 45$$

∴ The required fraction is 2745.

Ex 7.3 Class 6 Maths Question 5.

Find the equivalent fraction of 3648 with

(a) numerator 9

(b) denominator 4

Solution:

(a) Given that numerator = 9

$$\therefore \quad \frac{9}{D} = \frac{36}{48} \quad \Rightarrow \quad D \times 36 = 9 \times 48$$

$$\Rightarrow \quad D = \frac{9 \times 48}{36} = 12$$

So, the equivalent fraction is 912.

(b) Given that denominator = 4

∴ N4 = 3648 ⇒ N x 48 = 4 x 36

⇒ N = 4x3648 = 3

So, the equivalent fraction is 34 .

Ex 7.3 Class 6 Maths Question 6.

Check whether the given fractions are equivalent:

$$(a)\ \frac{5}{9}, \frac{30}{54} \qquad (b)\ \frac{3}{10}, \frac{12}{50} \qquad (c)\ \frac{7}{13}, \frac{5}{11}$$

Solution:
(a) 59 and 3054
We have 5 x 54 = 270
and 9 x 30 = 270
Here 5 x 54 = 9 x 30
∴ 59 and 3054 are equivalent fractions.
(b) 310 and 1250
We have 3 x 50 = 150
and 10 x 12 = 120
Here 3 x 50 ≠ 10 x 12
∴ 310 and 1250 are not equivalent fractions.
(c) 713 and 511
We have 7 x 11 = 77 and 5 x 13 = 65
Here 7 x 11 ≠ 5 x 13
∴ 713 and 511 are not equivalent fractions.
Ex 7.3 Class 6 Maths Question 7.
Reduce the following fractions to simplest form:

$(a)\ \frac{48}{60}$ $(b)\ \frac{150}{60}$ $(c)\ \frac{84}{98}$

$(d)\ \frac{12}{52}$ $(e)\ \frac{7}{28}$

Solution:

(a) $\frac{48}{60}$

We have

48 = 1, 2, 3, 4, 6, 8, (12), 16, 24, 48

60 = 1, 2, 3, 4, 5, 6, 10, (12), 15, 20, 30, 60

$\therefore$ HCF = 12

So, $\frac{48 \div 12}{60 \div 12} = \frac{4}{5}$

Hence, $\frac{48}{60} = \frac{4}{5}$

(b) $\frac{150}{60}$

We have

150 = 1, 2, 3, 5, 6, 10, 15, 25, (30), 50, 75, 150

60 = 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, (30), 60

$\therefore$ HCF = 30

So, $\frac{150 \div 30}{60 \div 30} = \frac{5}{2}$

Hence, $\frac{150}{60} = \frac{5}{2}$

(c) $\frac{84}{98}$

We have

84 = 1, 2, 3, 4, 6, 7, 12, (14), 21, 28, 42, 84

98 = 1, 2, 7, (14), 49, 98

$\therefore$ HCF = 14

So, $\frac{84 \div 14}{98 \div 14} = \frac{6}{7}$

Hence, $\frac{84}{98} = \frac{6}{7}$,

(d) $\frac{12}{52}$

We have 12 = 1, 2, 3, (4), 6, 12

52 = 1, 2, (4), 13, 26, 52

$\therefore$ HCF = 4

So, $\frac{12 \div 4}{52 \div 4} = \frac{3}{13}$

Hence, $\frac{12}{52} = \frac{3}{13}$

(e) $\frac{7}{28}$

We have $7 = 1, (7)$

$28 = 1, 2, 4, (7), 14, 28$

$\therefore$ HCF = 7

So, $\frac{7 \div 7}{28 \div 7} = \frac{1}{4}$

Hence, $\frac{7}{28} = \frac{1}{4}$

Ex 7.3 Class 6 Maths Question 8.

Ramesh had 28 pencils, Sheelu had 50 pencils and Jamaal had 80 pencils. After 4 months, Ramesh used up 10 pencils, Sheelu used up 25 pencils and Jamaal used up 40 pencils. What fraction did each use up? Check if each has used up an equal fraction of her/his pencils.

Solution:

Ramesh used up 10 pencils out of 20 pencils.

$\therefore$ Fraction = $\frac{10}{20} = \frac{1}{2}$

Sheelu used up 25 pencils out of 50 pencils.

$\therefore$ Fraction = $\frac{25}{50} = \frac{25 \div 25}{50 \div 25} = \frac{1}{2}$

Jamaal used up 40 pencils out of 80 pencils.

$\therefore$ Fraction = $\frac{40}{80} = \frac{4}{8} = \frac{1}{2}$

Yes, each has used up an equal fractions, i.e., 12.

Ex 7.3 Class 6 Maths Question 9.

Match the equivalent fractions and write two more for each.

(i) $\frac{250}{400}$	(a) $\frac{2}{3}$
(ii) $\frac{180}{200}$	(b) $\frac{2}{5}$
(iii) $\frac{660}{990}$	(c) $\frac{1}{2}$
(iv) $\frac{180}{360}$	(d) $\frac{5}{8}$
(v) $\frac{220}{550}$	(e) $\frac{9}{10}$

Solution:

(i) $\frac{250}{400}$

Factors of $250 = 2 \times 5 \times 5 \times 5$

Factors of $400 = 2 \times \boxed{2 \times 2 \times 2} \times 5 \times 5$

$HCF = 2 \times 5 \times 5 = 50$

$\therefore \quad \frac{250 \div 50}{400 \div 50} = \frac{5}{8}$

$\therefore \frac{250}{400} \leftrightarrow \frac{5}{8}$ or $(i) \leftrightarrow (d)$

Two additional examples of equivalent fractions are

(a) $\frac{5}{8} \times \frac{3}{3} = \frac{15}{24}$ (b) $\frac{5}{8} \times \frac{5}{5} = \frac{25}{40}$

(ii) $\frac{180}{200}$

Factors of $180 = \boxed{2} \times \boxed{2} \times 3 \times 3 \times \boxed{5}$

Factors of $200 = \boxed{2} \times \boxed{2} \times 2 \times 5 \times \boxed{5}$

$HCF = 2 \times 2 \times 5 = 20$

$\therefore \quad \frac{180 \div 20}{200 \div 20} = \frac{9}{10}$

$\therefore \frac{180}{200} \leftrightarrow \frac{9}{10}$ or $(ii) \leftrightarrow (e)$

Two additional examples of equivalent fractions are

(a) $\frac{9}{10} \times \frac{2}{2} = \frac{18}{20}$ (b) $\frac{9}{10} \times \frac{3}{3} = \frac{27}{30}$

(iii) $\frac{660}{990}$

$\frac{660 \div 10}{990 \div 10} = \frac{66}{99}$

Factors of $66 = 2 \times \boxed{3} \times 11$

Factors of $99 = 3 \times \boxed{3} \times 11$

$HCF = 3 \times 11 = 33$

$\therefore \quad \frac{66 \div 33}{99 \div 33} = \frac{2}{3}$

So, $\frac{660}{990} \leftrightarrow \frac{2}{3}$ or $(iii) \leftrightarrow (a)$

Two additional examples of equivalent fractions are

$(a)\ \frac{2}{3}\times\frac{2}{2}=\frac{4}{6}$ $(b)\ \frac{2}{3}\times\frac{3}{3}=\frac{6}{9}$

$(iv)\ \frac{180}{360}$

$$\frac{180\div10}{360\div10}=\frac{18}{36}$$

Factors of $18 = \boxed{2}\times 3\times 3$

Factors of $36 = \boxed{2}\times 2\times \boxed{3}\times \boxed{3}$

$$\text{HCF} = 2\times3\times3 = 18$$

$$\therefore\quad \frac{18\div18}{36\div18}=\frac{1}{2}$$

So, $\frac{180}{360}\leftrightarrow\frac{1}{2}$ or $(iv)\leftrightarrow(c)$

Two additional examples of equivalent fractions are

$(a)\ \frac{1}{2}\times\frac{3}{3}=\frac{3}{6}$ $(b)\ \frac{1}{2}\times\frac{5}{5}=\frac{5}{10}$

$(v)\ \frac{220}{550}$

$$\frac{220\div10}{550\div10}=\frac{22}{55}$$

Factors of $22 = 2\times\boxed{11}$

Factors of $55 = 5\times\boxed{11}$

$$\text{HCF} = 11$$

$$\therefore\quad \frac{22\div11}{55\div11}=\frac{2}{5}$$

So, $\frac{220}{550}\leftrightarrow\frac{2}{5}$ or $(v)\leftrightarrow(b)$

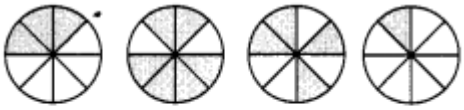
Two additional examples of equivalent fractions are

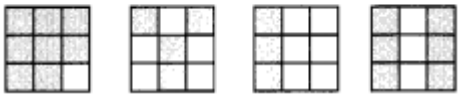
$(a)\ \frac{2}{5}\times\frac{2}{2}=\frac{4}{10}$ $(b)\ \frac{2}{5}\times\frac{3}{3}=\frac{6}{15}$

Fractions Class 6 Ex 7.4

Ex 7.4 Class 6 Maths Question 1.

Write shaded portion as fraction. Arrange them in ascending and descending order using correct sign '<', '=', '>' between the fractions.

(a) 

(b) 

(c) Show 24 , 46 , 86 and 66 on the number line. Put appropriate signs between the fractions given.

$\frac{5}{6} \square \frac{2}{6}, \frac{3}{6} \square 0, \frac{1}{6} \square \frac{6}{6}, \frac{8}{6} \square \frac{5}{6}$

Solution:

(a) Total number of divisions = 8

(i) Number of shaded parts = 3

∴ Fraction = 38

(ii) Total number of divisions = 8

Number of shaded parts = 6

∴ Fraction = 68

(iii) Total number of divisions = 8

Number of shaded parts = 4

∴ Fraction = 48

(iv) Total number of divisions = 8

Number of shaded part = 1

∴ Fraction = 18

Now the fractions are:

38, 68, 48 and 18 with same denominator.

Ascending order: $\frac{1}{8} < \frac{3}{8} < \frac{4}{8} < \frac{6}{8}$

Descending order $\frac{6}{8} > \frac{4}{8} > \frac{3}{8} > \frac{1}{8}$

(b)(i) Total number of divisions = 9

Number of shaded parts = 8

∴ Fraction = 89

(ii) Total number of divisions = 9

Number of shaded parts = 4

∴ Fraction = 49

(iii) Total number of divisions = 9

Number of shaded parts = 3

∴ Fraction = 39

(iv) Total number of divisions = 9

Number of shaded parts = 6

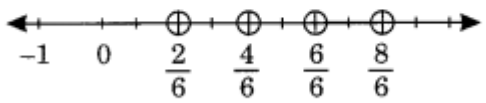
∴ Fraction = 69

∴ Fractions are 89, 49, 39, 69 with same denominator.

Ascending order: $\frac{3}{9} < \frac{4}{9} < \frac{6}{9} < \frac{8}{9}$

Descending order $\frac{8}{9} > \frac{6}{9} > \frac{4}{9} > \frac{3}{9}$

(c) $\frac{2}{6}, \frac{4}{6}, \frac{8}{6}$ and $\frac{6}{6}$



Now $\frac{5}{6} \boxed{>} \frac{2}{6}, \frac{3}{6} \boxed{>} 0, \frac{1}{6} \boxed{<} \frac{6}{6}, \frac{8}{6} \boxed{>} \frac{5}{6}$

Ex 7.4 Class 6 Maths Question 2.

Compare the fractions and put an appropriate sign.

(a) $\frac{3}{6} \square \frac{5}{6}$ (b) $\frac{1}{7} \square \frac{1}{4}$

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

Solution:

(a) $\frac{3}{6} \square \frac{5}{6}$

Here, denominators of the two fractions are same and 3 < 5.

$\therefore \frac{3}{6} \boxed{<} \frac{5}{6}$

(b) $\frac{1}{7} \square \frac{1}{4}$

Here, numerators of the fractions are same and 7 > 4.

$\therefore \frac{1}{7} \boxed{<} \frac{1}{4}$

(c) $\frac{4}{5} \square \frac{5}{5}$

Here, denominators of the two fractions are same and 4 < 5.

$\therefore \frac{4}{5} \boxed{<} \frac{5}{5}$

(d) $\frac{3}{5} \square \frac{3}{7}$

Here, numerators of the two fractions are same and 5 < 7.

$\therefore \frac{3}{5} \boxed{>} \frac{3}{7}$

Ex 7.4 Class 6 Maths Question 3.

Make five more such pairs and put appropriate signs.

Solution:

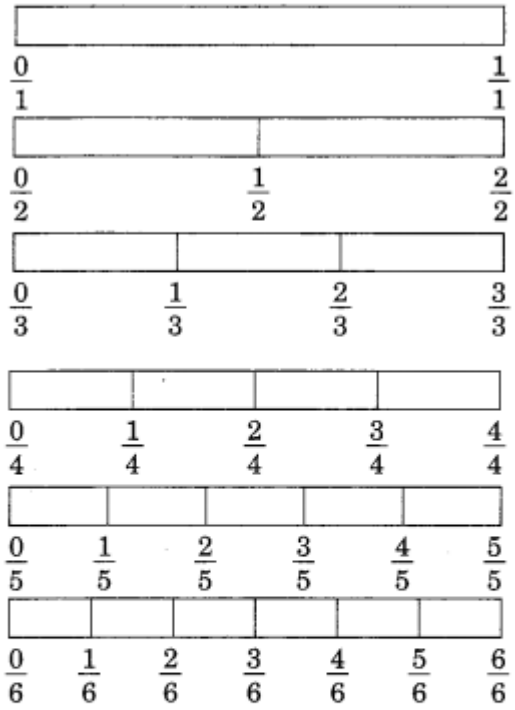
(a) $\frac{2}{7} \boxed{>} \frac{2}{11}$ (b) $\frac{6}{8} \boxed{>} \frac{3}{8}$

(c) $\frac{4}{9} \boxed{>} \frac{3}{9}$ (d) $\frac{1}{9} \boxed{<} \frac{5}{9}$

(e) $\frac{4}{10} \boxed{<} \frac{6}{10}$

Ex 7.4 Class 6 Maths Question 4.

Look at the figures and write '<', or '>' '=' between the given pairs of fractions.



(a) $\frac{1}{6} \square \frac{1}{3}$ (b) $\frac{3}{4} \square \frac{2}{6}$

(c) $\frac{2}{3} \square \frac{2}{4}$ (d) $\frac{6}{6} \square \frac{3}{3}$

(e) $\frac{5}{6} \square \frac{5}{5}$

Make five more such problems and solve them with your friends

Solution:

(a) $\frac{1}{6} \boxed{<} \frac{1}{3}$ (b) $\frac{3}{4} \boxed{>} \frac{2}{6}$

(c) $\frac{2}{3} \boxed{>} \frac{2}{4}$ (d) $\frac{6}{6} \boxed{=} \frac{3}{3}$

(e) $\frac{5}{6} \boxed{<} \frac{5}{5}$

Make five more such problems yourself and solve them with your friends.

Ex 7.4 Class 6 Maths Question 5.

How quickly can you do this? Fill appropriate sign. '<', '=', '>'.

(a) $\frac{1}{2} \square \frac{1}{5}$ (b) $\frac{2}{4} \square \frac{3}{6}$ (c) $\frac{3}{5} \square \frac{2}{3}$

(d) $\frac{3}{4} \square \frac{2}{8}$ (e) $\frac{3}{5} \square \frac{6}{5}$ (f) $\frac{7}{9} \square \frac{3}{9}$

(g) $\frac{1}{4} \square \frac{2}{8}$ (h) $\frac{6}{10} \square \frac{4}{5}$ (i) $\frac{3}{4} \square \frac{7}{8}$

(j) $\frac{5}{7} \square \frac{15}{21}$

Solution:

(a) $\frac{1}{2} \square \frac{1}{5}$

We have $1 \times 5 = 5$ and $1 \times 2 = 2$

Here, $2 < 5$ $\therefore$ $\frac{1}{2} \boxed{>} \frac{1}{5}$

(b) $\frac{2}{4} \square \frac{3}{6}$

We have $2 \times 6 = 12$ and $3 \times 4 = 12$

Here, $12 = 12$ $\therefore$ $\frac{2}{4} \boxed{=} \frac{3}{6}$

(c) $\frac{3}{5} \square \frac{2}{3}$

We have $3 \times 3 = 9$ and $2 \times 5 = 10$

Here, $9 < 10$ $\therefore$ $\frac{3}{5} \boxed{<} \frac{2}{3}$

(d) $\frac{3}{4} \square \frac{2}{8}$

We have $3 \times 8 = 24$ and $2 \times 4 = 8$

Here, $24 < 8$ $\therefore$ $\frac{3}{4} \boxed{>} \frac{2}{8}$

(e) $\frac{3}{5} \square \frac{6}{5}$

We have $3 \times 5 = 15$ and $5 \times 6 = 30$

Here, $15 < 30$ $\therefore$ $\frac{3}{5} \boxed{<} \frac{6}{5}$

(f) $\frac{7}{9} \square \frac{3}{9}$

We have $7 \times 9 = 63$ and $3 \times 9 = 27$

Here, $63 < 27$ $\therefore$ $\frac{7}{9} \boxed{>} \frac{3}{9}$

(g) $\frac{1}{4} \square \frac{2}{8}$

We have $1 \times 8 = 8$ and $2 \times 4 = 8$

Here, $8 < 8$ $\therefore$ $\frac{1}{4} \boxed{=} \frac{2}{8}$

(h) $\frac{6}{10} \square \frac{4}{5}$

We have $6 \times 5 = 30$ and $10 \times 4 = 40$

Here, $30 < 42$ $\therefore$ $\frac{6}{10} \boxed{<} \frac{4}{5}$

(i) $\frac{3}{4} \square \frac{7}{8}$

We have $3 \times 8 = 24$ and $4 \times 7 = 28$

Here, $24 < 28$ $\therefore$ $\frac{3}{4} \boxed{<} \frac{7}{8}$

(j) $\frac{5}{7} \square \frac{15}{21}$

We have $5 \times 21 = 105$ and $7 \times 15 = 105$

Here, $105 < 105$ $\therefore$ $\boxed{\frac{5}{7}} = \boxed{\frac{15}{21}}$

Ex 7.4 Class 6 Maths Question 6.

The following fractions represent just three different numbers. Separate them into three groups of equivalent fractions, by changing each one to its simplest form.

(a) $\frac{2}{12}$ (b) $\frac{3}{15}$ (c) $\frac{8}{50}$ (d) $\frac{16}{100}$

(e) $\frac{10}{60}$ (f) $\frac{15}{75}$ (g) $\frac{12}{60}$ (h) $\frac{16}{96}$

(i) $\frac{12}{75}$ (j) $\frac{12}{72}$ (k) $\frac{3}{18}$ (l) $\frac{4}{25}$

Solution:

(a) $\frac{2}{12} = \frac{2 \div 2}{12 \div 2} = \frac{1}{6}$ [$\because$ HCF of 2 and 12 is 2]

(b) $\frac{3}{15} = \frac{3 \div 3}{15 \div 3} = \frac{1}{5}$ [$\because$ HCF of 3 and 15 is 3]

(c) $\frac{8}{50} = \frac{8 \div 2}{50 \div 2} = \frac{4}{25}$ [$\because$ HCF of 8 and 50 is 2]

(d) $\frac{16}{100} = \frac{16 \div 4}{100 \div 4} = \frac{4}{25}$ [$\because$ HCF of 16 and 100 is 4]

(e) $\frac{10}{60} = \frac{10 \div 10}{60 \div 10} = \frac{1}{6}$ [$\because$ HCF of 10 and 60 is 10]

(f) $\frac{15}{75} = \frac{15 \div 15}{75 \div 15} = \frac{1}{5}$ [$\because$ HCF of 15 and 75 is 15]

(g) $\frac{12}{60} = \frac{12 \div 12}{60 \div 12} = \frac{1}{5}$ [$\because$ HCF of 12 and 60 is 12]

(h) $\frac{16}{96} = \frac{16 \div 16}{96 \div 16} = \frac{1}{6}$ [$\because$ HCF of 16 and 96 is 16]

(i) $\frac{12}{75} = \frac{12 \div 3}{75 \div 3} = \frac{4}{25}$ [$\because$ HCF of 12 and 75 is 3]

(j) $\frac{12}{72} = \frac{12 \div 12}{72 \div 12} = \frac{1}{6}$ [$\because$ HCF of 12 and 72 is 12]

(k) $\frac{3}{18} = \frac{3 \div 3}{18 \div 3} = \frac{1}{6}$ [$\because$ HCF of 3 and 18 is 3]

(l) $\frac{4}{25} = \frac{4 \div 1}{25 \div 1} = \frac{4}{25}$ [$\because$ HCF of 4 and 25 is 1]

Now grouping the above fractions into equivalent fractions, we have

(i) $\frac{2}{12} = \frac{10}{60} = \frac{16}{96} = \frac{12}{72} = \frac{3}{18}$ $\left[\text{each } \frac{1}{6}\right]$

(ii) $\frac{3}{15} = \frac{15}{75} = \frac{12}{60}$ $\left[\text{each } \frac{1}{5}\right]$

(iii) $\frac{8}{50} = \frac{16}{100} = \frac{12}{75} = \frac{4}{25}$ $\left[\text{each } \frac{4}{25}\right]$

Ex 7.4 Class 6 Maths Question 7.
Find answers to the following. Write and indicate how you solved them.

(a) Is $\frac{5}{9}$ equal to $\frac{4}{5}$?

(b) Is $\frac{9}{16}$ equal to $\frac{5}{9}$?

(c) Is $\frac{4}{5}$ equal to $\frac{16}{20}$?

(d) Is $\frac{1}{15}$ equal to $\frac{4}{30}$?

Solution:

(a) $\frac{5}{9}$ and $\frac{4}{5}$

By cross-multiplying, we get
5 x 5 = 25 and 4 x 9 = 36
Since $25 \neq 36$

$\therefore \frac{5}{9}$ is not equal to $\frac{4}{5}$.

(b) $\frac{9}{16}$ and $\frac{5}{9}$

By cross-multiplying, we get
9 x 9 = 81 and 16 x 5 =80
Since $81 \neq 80$

$\therefore \frac{9}{16}$ is not equal to $\frac{5}{9}$.

(c) $\frac{4}{5}$ and $\frac{16}{20}$

By cross-multiplying, we get
4 x 20 = 80 and 5 x 16 = 80
Since 80 = 80

$\therefore \frac{4}{5}$ is equal to $\frac{16}{20}$.

(d) $\frac{1}{15}$ and $\frac{4}{30}$

By cross-multiplying, we get
1 x 30 = 30 and 4 x 15 = 60

$\therefore \frac{1}{15}$ is not equal to $\frac{4}{30}$.

Ex 7.4 Class 6 Maths Question 8.
Ila read 25 pages of a book containing 100 pages.
Lalita read 25 of the same book. Who read less?
Solution:
Ila reads 25 pages out of 100 pages.

$\therefore$ Fractions = $\frac{25}{100} = \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$

Lalita reads 25 of the same book.
Comparing 14 and 25 , we get
1 x 5 = 5 and 2 x 4 = 8
Since 5 < 8
∴ 14 < 25
Hence Ila reads less pages.
Ex 7.4 Class 6 Maths Question 9.
Rafiq exercised for 36 of an hour, while Rohit exercised for 34 of an hour. Who exercised for a longer time?
Solution:
Rafiq exercised for 36 of an hour.
Rohit exercised for 34 of an hour.
Comparing 36 and 34 , we get
3 x 4 = 12 and 3 x 6 = 18
Since 12 < 18
∴ 34 > 36
Hence Rohit exercised for longer time.
Ex 7.4 Class 6 Maths Question 10.
In a class A of 25 students, 20 passed in first class, in another class B of 30 students, 24 passed in first class. In which class was a greater fraction of students getting first class?
Solution:
In class A, 20 students passed in first class out of 25 students.
∴ Fraction of students getting first class

$$= \frac{20}{25} = \frac{20 \div 5}{25 \div 5} = \frac{4}{5}$$

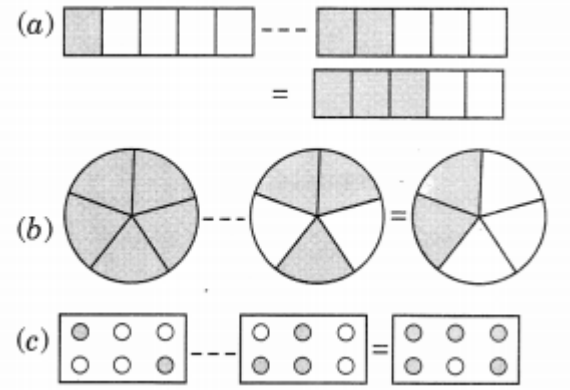
In class B, 24 students passed in first class out of 30 students.
∴ Fraction of students getting first class

$$= \frac{24}{30} = \frac{24 \div 6}{30 \div 6} = \frac{4}{5}$$

Comparing the two fractions, we get 45 = 45
Hence, both the class A and B have the same fractions.

Fractions Class 6 Ex 7.5

Ex 7.5 Class 6 Maths Question 1.
Write these fractions appropriately as additions or subtractions.

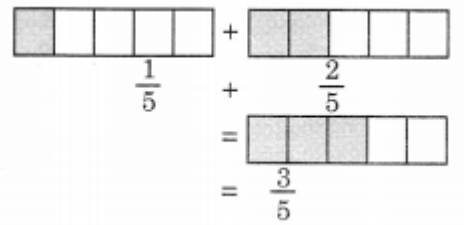


Solution:
(a) The given figure represents the addition of

$\frac{1}{5}$ and $\frac{2}{5}$.

i.e., $\frac{1}{5}+\frac{2}{5}=\frac{1+2}{5}=\frac{3}{5}$

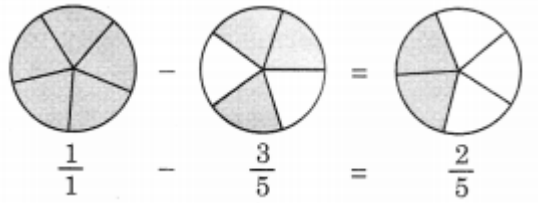
Thus the given diagrams can be represented as



(b) The given figure represents the difference between 1 and 35.

i.e., $1-\frac{3}{5}=\frac{1}{1}-\frac{3}{5}=\frac{1\times5-3\times1}{5}=\frac{5-3}{5}=\frac{2}{5}$

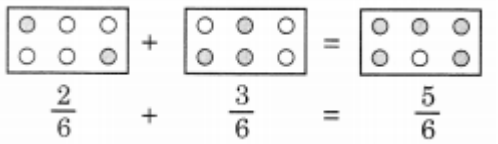
Thus, the given diagrams can be represented as



(c) The given figure represents addition of 26 and 36.

i.e., $\frac{2}{6}+\frac{3}{6}=\frac{2+3}{6}=\frac{5}{6}$

Thus, the given diagrams can be represented as



Ex 7.5 Class 6 Maths Question 2.

Solve:

(*a*) $\frac{1}{18}+\frac{1}{18}$ (*b*) $\frac{8}{15}+\frac{3}{15}$

(*c*) $\frac{7}{7}-\frac{5}{7}$ (*d*) $\frac{1}{22}+\frac{21}{22}$

(*e*) $\frac{12}{15}-\frac{7}{15}$ (*f*) $\frac{5}{8}+\frac{3}{8}$

(g) $1-\frac{2}{3}\left(1=\frac{3}{3}\right)$ (*h*) $\frac{1}{4}+\frac{0}{4}$

(*i*) $3-\frac{12}{5}$

Solution:

$(a)\ \frac{1}{18}+\frac{1}{18}=\frac{1+1}{18}=\frac{2}{18}=\frac{2\div 2}{18\div 2}=\frac{1}{9}$

$(b)\ \frac{8}{15}+\frac{3}{15}=\frac{8+3}{15}=\frac{11}{15}$

$(c)\ \frac{7}{7}-\frac{5}{7}=\frac{7-5}{7}=\frac{2}{7}$

$(d)\ \frac{1}{22}+\frac{21}{22}=\frac{1+21}{22}=\frac{22}{22}=1$

$(e)\ \frac{12}{15}-\frac{7}{15}=\frac{12-7}{15}=\frac{5}{15}=\frac{5\div 5}{15\div 5}=\frac{1}{3}$

$(f)\ \frac{5}{8}+\frac{3}{8}=\frac{5+3}{8}=\frac{8}{8}=1$

$(g)\ 1-\frac{2}{3}\left(1=\frac{3}{3}\right)=\frac{3}{3}-\frac{2}{3}=\frac{3-2}{3}=\frac{1}{3}$

$(h)\ \frac{1}{4}+\frac{0}{4}=\frac{1+0}{4}=\frac{1}{4}$

$(i)\ 3-\frac{12}{5}=\frac{3}{1}-\frac{12}{5}=\frac{3\times 5-12\times 1}{5}=\frac{15-12}{5}=\frac{3}{5}$

Ex 7.5 Class 6 Maths Question 3.

Shubham painted 23 of the wall space in his room. His sister Madhavi helped and painted 13 of the wall space. How much did they paint together?

Solution:

Fraction of wall painted by Shubham = 23

Fraction of wall painted by Madhavi = 13

Fraction of wall painted by Shubham and Madhavi

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

Thus the fraction of wall painted by both = 1

Ex 7.5 Class 6 Maths Question 4.

Fill in the missing fractions.

$(a)\ \frac{7}{10}-\square=\frac{3}{10}$ $(b)\ \square-\frac{3}{21}=\frac{5}{21}$

$(c)\ \square-\frac{3}{6}=\frac{3}{6}$ $(d)\ \square+\frac{5}{27}=\frac{12}{27}$

Solution:

(a) The difference between $\frac{7}{10}$ and $\square$ is $\frac{3}{10}$.

$\therefore$ Missing fraction

$$= \frac{7}{10} - \frac{3}{10} = \frac{7-3}{10} = \frac{4}{10} = \frac{4 \div 2}{10 \div 2} = \frac{2}{5}$$

Thus, $\square = \frac{2}{5}$

(b) The difference between $\square$ and $\frac{3}{21}$ is $\frac{5}{21}$.

$\therefore$ Missing fraction $= \frac{5}{21} + \frac{3}{21} = \frac{5+3}{21} = \frac{8}{21}$

Thus, $\square = \frac{8}{21}$

(c) The difference between $\square$ and $\frac{3}{6}$ is $\frac{3}{6}$.

$\therefore$ Missing fraction $= \frac{3}{6} + \frac{3}{6} = \frac{3+3}{6} = \frac{6}{6} = 1$

Thus, $\square = 1$

(d) Sum of $\square$ and $\frac{5}{27}$ is $\frac{12}{27}$.

$\therefore$ Missing fraction $= \frac{12}{27} - \frac{5}{27} = \frac{12-5}{27} = \frac{7}{27}$

Thus, $\square = \frac{7}{27}$

Ex 7.5 Class 6 Maths Question 5.
Javed was given 57 of a basket of oranges. What fraction of oranges was left in the basket?
Solution:
Fraction of basket of oranges = 57
Fraction of basket as a whole can be taken as 1.
$\therefore$ Fraction of basket of oranges left

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

$$= \frac{7-5}{7} = \frac{2}{7}$$

Thus, the required fraction = 27 .

Fractions Class 6 Ex 7.6

Ex 7.6 Class 6 Maths Question 1.
Solve

(a) $\frac{2}{3}+\frac{1}{7}$ (b) $\frac{3}{10}+\frac{7}{15}$ (c) $\frac{4}{9}+\frac{2}{7}$

(d) $\frac{5}{7}+\frac{1}{3}$ (e) $\frac{2}{5}+\frac{1}{6}$ (f) $\frac{4}{5}+\frac{2}{3}$

(g) $\frac{3}{4}-\frac{1}{3}$ (h) $\frac{5}{6}-\frac{1}{3}$ (i) $\frac{2}{3}+\frac{3}{4}+\frac{1}{2}$

(j) $\frac{1}{2}+\frac{1}{3}+\frac{1}{6}$ (k) $1\frac{1}{3}+3\frac{2}{3}$ (l) $4\frac{2}{3}+3\frac{1}{4}$

(m) $\frac{16}{5}-\frac{7}{5}$ (n) $\frac{4}{3}-\frac{1}{2}$

Solution:

(a) $\frac{2}{3}+\frac{1}{7}=\frac{2\times7+1\times3}{21}=\frac{14+3}{21}=\frac{17}{21}$

Hence, $\frac{2}{3}+\frac{1}{7}=\frac{17}{21}$

(b) $\frac{3}{10}+\frac{7}{15}$

LCM of 10 and 15 = 30

$\therefore \frac{3}{10}+\frac{7}{15}=\frac{3\times3}{10\times3}+\frac{7\times2}{15\times2}=\frac{9}{30}+\frac{14}{30}=\frac{23}{30}$

Hence, $\frac{3}{10}+\frac{7}{15}=\frac{23}{30}$

(c) $\frac{4}{9}+\frac{2}{7}=\frac{4\times7}{9\times7}+\frac{2\times9}{7\times9}$

$=\frac{28}{63}+\frac{18}{63}=\frac{28+18}{63}=\frac{46}{63}$

Hence, $\frac{4}{9}+\frac{2}{7}=\frac{46}{63}$

(d) $\frac{5}{7}+\frac{1}{3}=\frac{5\times3}{7\times3}+\frac{1\times7}{3\times7}=\frac{15}{21}+\frac{7}{21}=\frac{15+7}{21}=\frac{22}{21}$

Hence, $\frac{5}{7}+\frac{1}{3}=\frac{22}{21}$

(e) $\frac{2}{5}+\frac{1}{6}=\frac{2\times6}{5\times6}+\frac{1\times5}{6\times5}$

$=\frac{12}{30}+\frac{5}{30}=\frac{12+5}{30}=\frac{17}{30}$

Hence, $\frac{2}{5}+\frac{1}{6}=\frac{17}{30}$

(f) $\frac{4}{5}+\frac{2}{3}=\frac{4\times3}{5\times3}+\frac{2\times5}{3\times5}$

$=\frac{12}{15}+\frac{10}{15}=\frac{12+10}{15}=\frac{22}{15}$

Hence, $\frac{4}{5}+\frac{2}{3}=\frac{22}{15}$

(g) $\frac{3}{4}-\frac{1}{3}=\frac{3\times3}{4\times3}-\frac{1\times4}{3\times4}-\frac{9}{12}+\frac{4}{12}=\frac{9-4}{12}=\frac{5}{12}$

Hence, $\frac{3}{4}-\frac{1}{3}=\frac{5}{12}$

(h) $\frac{5}{6}-\frac{1}{3}$

LCM of 6 and 3 = 6

$\therefore \frac{5}{6}-\frac{1}{3}=\frac{5\times1}{6\times1}-\frac{1\times2}{3\times2}$

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

Hence, $\frac{5}{6}-\frac{1}{3}=\frac{1}{2}$

(i) $\frac{2}{3}+\frac{3}{4}+\frac{1}{2}$

LCM of 3, 4 and 2 = 12

$\therefore \frac{2}{3}+\frac{3}{4}+\frac{1}{2}=\frac{2\times4}{3\times4}+\frac{3\times3}{4\times3}+\frac{1\times6}{2\times6}$

$=\frac{8}{12}+\frac{9}{12}+\frac{6}{12}=\frac{8+9+6}{12}=\frac{23}{12}$

Hence, $\frac{2}{3}+\frac{3}{4}+\frac{1}{2}=\frac{23}{12}$

(j) $\frac{1}{2}+\frac{1}{3}+\frac{1}{6}$

LCM of 2, 3 and 6 = 6

$\therefore \frac{1\times3}{2\times3}+\frac{1\times2}{3\times2}+\frac{1\times1}{1\times6}=\frac{3}{6}+\frac{2}{6}+\frac{1}{6}$

$=\frac{3+2+1}{6}=\frac{6}{6}=1$

Hence, $\frac{1}{2}+\frac{1}{3}+\frac{1}{6}=1$

(k) $1\frac{1}{3}+3\frac{2}{3}=1+\frac{1}{3}+3+\frac{2}{3}=4+\frac{1}{3}+\frac{2}{3}$

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

Hence, $1\frac{1}{3}+3\frac{2}{3}=5$

(l) $4\frac{2}{3}+3\frac{1}{4}=4+\frac{2}{3}+3+\frac{1}{4}=4+3+\frac{2}{3}+\frac{1}{4}$

$=7+\frac{2\times4}{3\times4}+\frac{1\times3}{4\times3}=7+\frac{8}{12}+\frac{3}{12}$

$$= 7+\frac{8+3}{12} = 7+\frac{11}{12} = \frac{7}{1}+\frac{11}{12}$$

$$= \frac{7\times 12+1\times 11}{12} = \frac{84+11}{12} = \frac{95}{12}$$

Hence, $4\frac{2}{3}+3\frac{1}{4} = \frac{95}{12}$

(m) $\frac{16}{5}-\frac{7}{5} = \frac{16-7}{5} = \frac{9}{5}$

Hence, $\frac{16}{5}-\frac{7}{5} = \frac{9}{5}$

(n) $\frac{4}{3}-\frac{1}{2} = \frac{4\times 2}{3\times 2}-\frac{1\times 3}{2\times 3} = \frac{8}{6}-\frac{3}{6} = \frac{8-3}{6} = \frac{5}{6}$

Hence, $\frac{4}{3}-\frac{1}{2} = \frac{5}{6}$.

Ex 7.6 Class 6 Maths Question 2.

Sarita bought 25 metre of ribbon and Lalita 34 metre of ribbon. What is the total length of the ribbon they bought?

Solution:

Length of ribbon bought by Sarita = 25 metre

Length of ribbon bought by Lalita = 34 metre

∴ Length of ribbon bought by Sarita and Lalita

$$= \frac{2}{5}\text{ metre}+\frac{3}{4}\text{ metre} = \left(\frac{2}{5}+\frac{3}{4}\right)\text{metre}$$

$$= \left(\frac{2\times 4}{5\times 4}+\frac{3\times 5}{4\times 5}\right)\text{metre} = \left(\frac{8}{20}+\frac{15}{20}\right)\text{metre}$$

$$= \left(\frac{8+15}{20}\right)\text{metre} = \frac{23}{20}\text{ metre}$$

Hence, the required length = 2320 metre

Ex 7.6 Class 6 Maths Question 3.

Naina was given 112 piece of cake and Najma was given 113 piece of cake. Find the total amount of cake was given to both of them.

Solution:

Piece of cake given to Naina = 1112

Piece of cake given to Najma = 1113

Piece of cake given to Naina and Najma

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

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

$$= 2\frac{5}{6}$$

Hence the total amount of piece given to both = 256.

Ex 7.6 Class 6 Maths Question 4.
Fill in the boxes:

(a) $\square - \frac{5}{8} = \frac{1}{4}$ (b) $\square - \frac{1}{5} = \frac{1}{2}$

(c) $\frac{1}{2} - \square = \frac{1}{6}$

Solution:

(a) $\square - \frac{5}{8} = \frac{1}{4}$

Here, missing number is 14 more than 58 .

$$\therefore \quad \square = \frac{5}{8} + \frac{1}{4}$$

$$\Rightarrow \quad \square = \frac{5 \times 1 + 1 \times 2}{8}$$

$$\Rightarrow \quad \square = \frac{5+2}{8}$$

$$\Rightarrow \quad \square = \frac{7}{8}$$

$$\text{Hence} \quad \square = \frac{7}{8}$$

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

Here, missing number is 12 more than 15 .

$$\therefore \quad \square = \frac{1}{5} + \frac{1}{2}$$

$$\Rightarrow \quad \square = \frac{1 \times 2}{5 \times 2} + \frac{1 \times 5}{2 \times 5}$$

$$\Rightarrow \quad \square = \frac{2}{10} + \frac{5}{10}$$

$$\Rightarrow \quad \square = \frac{2+5}{10} = \frac{7}{10}$$

$$\text{Hence} \quad \square = \frac{7}{10}$$

(c) $\frac{1}{2} - \square = \frac{1}{6}$

Here, missing number is 16 less than 12.

$$\therefore \quad \square = \frac{1}{2} - \frac{1}{6}$$

$$\Rightarrow \quad \square = \frac{1\times3}{2\times3} - \frac{1\times1}{6\times1}$$

$$\Rightarrow \quad \square = \frac{3}{6} - \frac{1}{6}$$

$$\Rightarrow \quad \square = \frac{3-1}{6} = \frac{2}{6}$$

$$\Rightarrow \quad \square = \frac{1}{3}$$

$$\text{Hence} \quad \square = \frac{1}{3}$$

Ex 7.6 Class 6 Maths Question 5.
Complete the addition-subtraction box.

(a)

⊖ \ ⊕			
	$\frac{2}{3}$	$\frac{4}{3}$	
	$\frac{1}{3}$	$\frac{2}{3}$	

(b)

⊖ \ ⊕			
	$\frac{1}{2}$	$\frac{1}{3}$	
	$\frac{1}{3}$	$\frac{1}{4}$	

Solution:

(a) **Addition: I Row** $\frac{2}{3} + \frac{4}{3} = \frac{2+4}{3}$

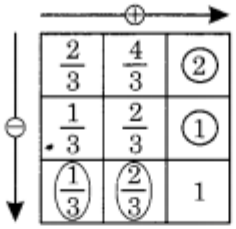
$$= \frac{6}{3} = \frac{6\div3}{3\div3} = \frac{2}{1} = 2$$

II Row $\frac{1}{3} + \frac{2}{3} = \frac{1+2}{3} = \frac{3}{3} = 1$

Subtraction: I Column: $\frac{2}{3} - \frac{1}{3} = \frac{2-1}{3} = \frac{1}{3}$

II Column: $\frac{4}{3} - \frac{2}{3} = \frac{4-2}{3} = \frac{2}{3}$

Thus the box may be completed as follows:



$\frac{2}{3}$	$\frac{4}{3}$	(2)
$\frac{1}{3}$	$\frac{2}{3}$	(1)
$(\frac{1}{3})$	$(\frac{2}{3})$	1

(*b*) **Addition: I Row**:

$$\frac{1}{2}+\frac{1}{3}=\frac{1\times3+1\times2}{6}=\frac{3+2}{6}=\frac{5}{6}$$

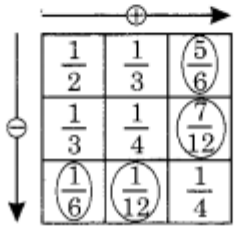
II Row: $\frac{1}{3}+\frac{1}{4}=\frac{1\times4+1\times3}{12}=\frac{4+3}{12}=\frac{7}{12}$

Subtraction: I Column:

$$\frac{1}{2}-\frac{1}{3}=\frac{1\times3-1\times2}{6}=\frac{3-2}{6}=\frac{1}{6}$$

II Column: $\frac{1}{3}-\frac{1}{4}=\frac{1\times4-1\times3}{12}=\frac{4-3}{12}=\frac{1}{12}$

Thus, the box may be completed as follows:



$\frac{1}{2}$	$\frac{1}{3}$	$(\frac{5}{6})$
$\frac{1}{3}$	$\frac{1}{4}$	$(\frac{7}{12})$
$(\frac{1}{6})$	$(\frac{1}{12})$	$\frac{1}{4}$

Ex 7.6 Class 6 Maths Question 6.

A piece of wire 78 metre long broke into two pieces. One piece was 14 metre long. How long is the other piece?

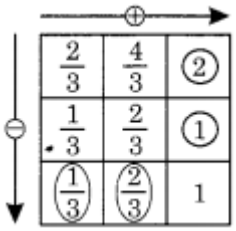
Solution:

Total length of the wire = 78 metre

Length of one piece of wire = 14 metre

∴ Length of the other piece = 78 – 14

LCM of 8 and 4 = 8



$\frac{2}{3}$	$\frac{4}{3}$	(2)
$\frac{1}{3}$	$\frac{2}{3}$	(1)
$(\frac{1}{3})$	$(\frac{2}{3})$	1

Hence, the length of the other piece = 58 metre.

Ex 7.6 Class 6 Maths Question 7.

Nandini's house is 910 km from her school. She walked some distance and then took a bus for 12km to reach the school. How far did she walk?

Solution:

Total distance from house to school = 910 km.
Distance travelled by Nandini by bus = 12 km
∴ Distance travelled by her on foot

$$= \frac{9}{10}\ \text{km} - \frac{1}{2}\ \text{km} = \left(\frac{9}{10} - \frac{1}{2}\right)\text{km}$$

LCM of 10 and 2 = 10

$$\therefore \left(\frac{9}{10} - \frac{1}{2}\right)\text{km} = \left(\frac{9\times1}{10\times1} - \frac{1\times5}{2\times5}\right)\text{km}$$

$$= \left(\frac{9}{10} - \frac{5}{10}\right)\text{km} = \left(\frac{9-5}{10}\right)\text{km}$$

$$= \frac{4}{10}\ \text{km} = \frac{2}{5}\ \text{km}$$

Hence, the distance travelled by her on foot = 25km.
Ex 7.6 Class 6 Maths Question 8.
Asha and Samuel have bookshelves of the same size partly filled with books. Asha's shelf is 56 th full and Samuel's shelf is 25 th full. Whose bookshelf is more full? By what fraction?
Solution:
Asha's shelf is 56 th full
and Samuel's shelf is 25 th full
Comparing 56 and 25
LCM of 6 and 5 = 30

$$\therefore \frac{5\times5}{6\times5} = \frac{25}{30} \text{ and } \frac{2\times6}{5\times6} = \frac{12}{30}$$

Hence, $25 > 12$, So $\frac{5}{6}$ is more than $\frac{2}{5}$.

Hence, Asha's shelf is full more than Samuel's shelf.

$$\text{Now, } \frac{5}{6} - \frac{2}{5} = \frac{25}{30} - \frac{12}{30} = \frac{25-12}{30} = \frac{13}{30}$$

Hence, 1330 th fraction is more full of Asha's shelf.
Ex 7.6 Class 6 Maths Question 9.
Jaidev takes 215 minutes to walk across the school ground. Rahul takes 74 minutes to do the same. Who takes less time and by what fraction?
Solution:
Jaidev takes 215 minutes 5
Rahul takes 274 minutes
Comparing 215 minutes and 74 minutes

$$2\frac{1}{5} = 2 + \frac{1}{5} = \frac{2}{1} + \frac{1}{5} = \frac{2\times5}{1\times5} + \frac{1\times1}{5\times1} = \frac{10}{5} + \frac{1}{5}$$

$$= \frac{10+1}{5} = \frac{11}{5}$$

Now, the given fractions are $\frac{11}{5}$ and $\frac{7}{4}$

$$\frac{11}{5}\times\frac{4}{4}=\frac{44}{20} \text{ and } \frac{7}{4}\times\frac{5}{5}=\frac{35}{20}$$

Here, $35 < 44 \quad \therefore \quad \frac{7}{4} < \frac{11}{5}$.

So, the time take to cover the same distance by Rahul is less than that of Jaidev.

$$\frac{11}{5}-\frac{7}{4}=\frac{44}{20}-\frac{35}{20}=\frac{44-35}{20}=\frac{9}{20} \text{ minutes}$$

Hence, Rahul takes 920 minutes less to across the school ground.