Edu Junior

Where Passion Meets Educations

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Where passion meets with educations

CLASS 6TH

MATHS

CHAPTER- 7th

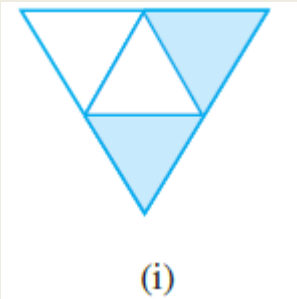
FRACTIONS

EXERCISE 7.1

NCERT SOLUTION

1. Write the fraction representing the shaded portion.

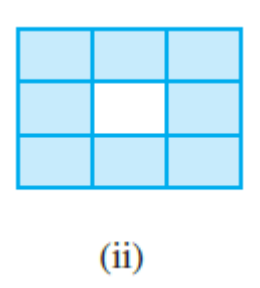
(i)



Ans.

$\frac{2}{4}$

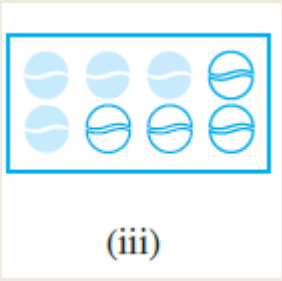
(ii)



Ans.

$\frac{8}{9}$

(iii)



(iii)

Ans.

$\frac{4}{8}$

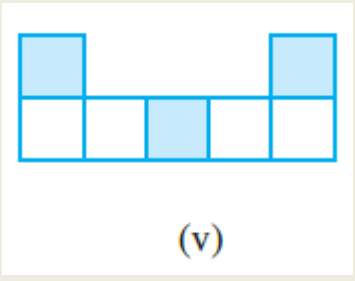
(iv)

(iv)

Ans.

$\frac{1}{4}$

(v)

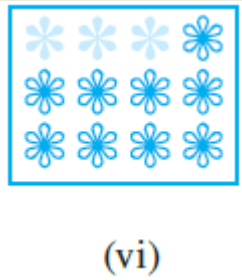


(v)

Ans.

$\frac{3}{7}$

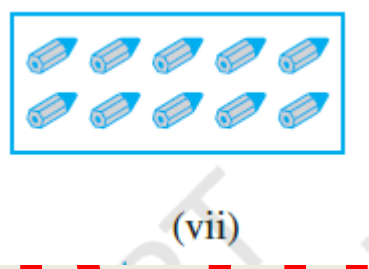
(vi)



Ans.

$$\frac{3}{12}$$

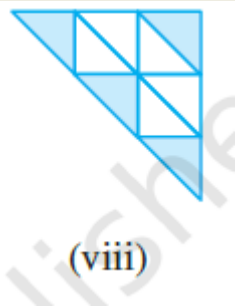
(vii)



Ans.

$$\frac{10}{10}$$

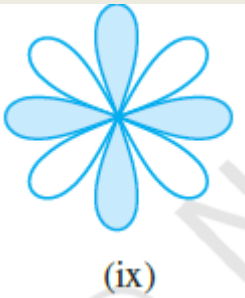
(viii)



Ans.

$$\frac{4}{9}$$

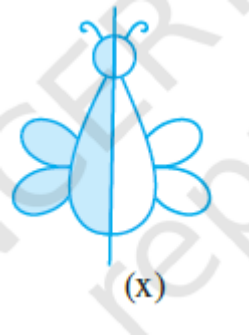
(ix)



Ans.

$\frac{4}{8}$

(x)

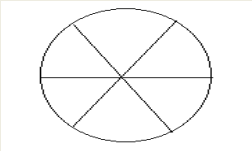


Ans.

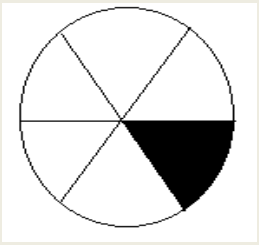
$\frac{1}{2}$

2. Colour the part according to the given fraction.

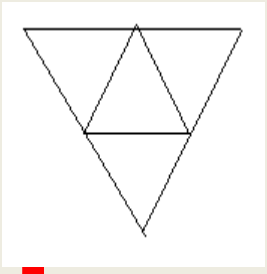
(i) $\frac{1}{6}$



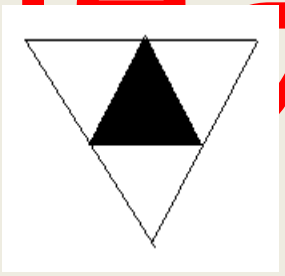
Ans.



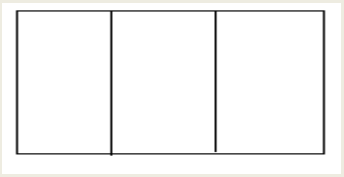
(ii) $\frac{1}{4}$



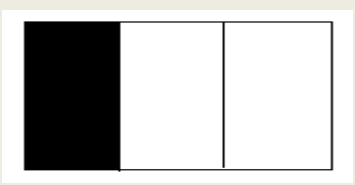
Ans.



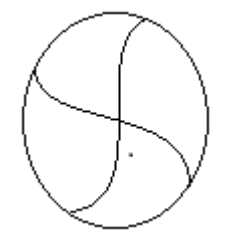
(iii) $\frac{1}{3}$



Ans.

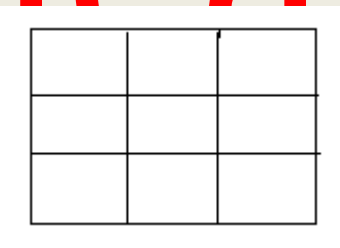


(iv) $\frac{3}{4}$

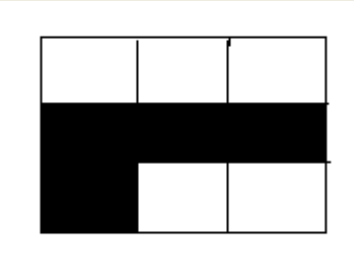


Ans.

(v) $\frac{4}{9}$

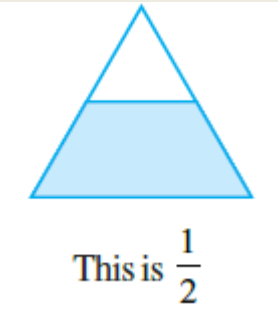


Ans.



3. Identify the error, if any.

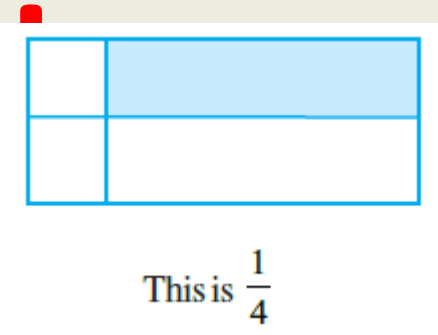
(i)



Ans.

Shaded portions does not represent $\frac{1}{2}$.

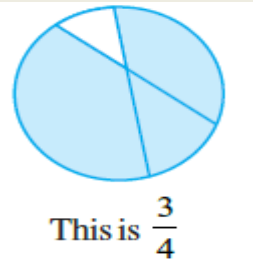
(ii)



Ans.

Shaded portions does not represent $\frac{1}{4}$.

(iii)



Ans.

Shaded portions does not represent $\frac{3}{4}$.

4. What fraction of a day is 8 hours?

Ans.

No. of hours in a day = 24hrs

Required Fraction = $\frac{8}{24}$

5. What fraction of an hour is 40 minutes?

Ans.

No. of minutes in an hour = 60 minutes

Required fraction = $\frac{40}{60}$

6. Arya, Abhimanyu, and Vivek shared lunch. Arya has brought two sandwiches, one made of vegetable and one of jam. The other two boys forgot to bring their lunch. Arya agreed to share his sandwiches so that each person will have an equal share of each sandwich.

(a) How can Arya divide his sandwiches so that each person has an equal share?

Ans.

Arya has divided his sandwiches in 3 equal parts.

So, each person will get one part.

(b) What part of a sandwich will each boy receive?

Ans.

Each person will get $= \frac{1}{3}$ part.

$\therefore$ Required fraction $= \frac{1}{3}$

7. Kanchan dyes dresses. She had to dye 30 dresses. She has so far finished 20 dresses. What fraction of dresses has she finished?

Ans.

No. of dress she had to dye $= 30$ dresses

No. of dresses finished so far $= 20$ dresses

Fraction of dresses she had finished $= \frac{20}{30} = \frac{2}{3}$

8. Write the natural numbers from 2 to 12. What fraction of them are prime numbers?

Ans.

Natural Number from 2 to 12 are $= 2, 3, 4, 5, 6, 7, 8, 9, 10, 11$ and $12 = 11$

Prime Number from 2 to 12 $= 2, 3, 5, 7$ and $12 = 5$

Fraction of prime Numbers to Natural Numbers $= \frac{5}{11}$

9. Write the natural numbers from 102 to 113. What fraction of them are prime numbers?

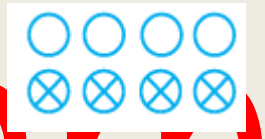
Ans.

Natural Number from 102 to 113 are = 102, 103, 104, 105, 106, 107, 108, 109, 110, 111,112, and 113 = 12

Prime Number from 2 to 12 = 103, 107, 109 and 113 = 4

Fraction of prime Numbers to Natural Numbers $= \frac{4}{12} = \frac{1}{3}$

10. What fraction of these circles have X's in them?



Ans.

Total Number of circles = 8

Number of circle having X in them = 4

Required Fraction $= \frac{4}{8} = \frac{1}{2}$

11. Kristin received a CD player for her birthday. She bought 3 CDs and received 5 others as gifts. What fraction of her total CDs did she buy and what fraction did she receive as gifts?

Ans.

No. of CDs bought by her = 3

No. of CDs received as a gift =5

Total Number of CDs $= 3 + 5 = 8$

Fraction of CD bought $= \frac{3}{8}$

Fraction of CDs received as gift $= \frac{5}{8}$

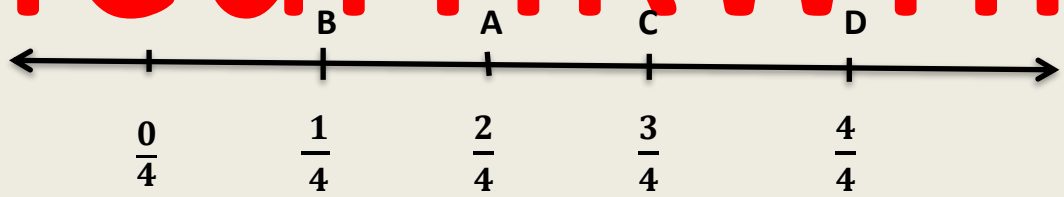
EXERCISE 7.2

NCERT SOLUTION

1. Draw number lines and locate the points on them:

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

Ans.



$\frac{1}{4} = A$

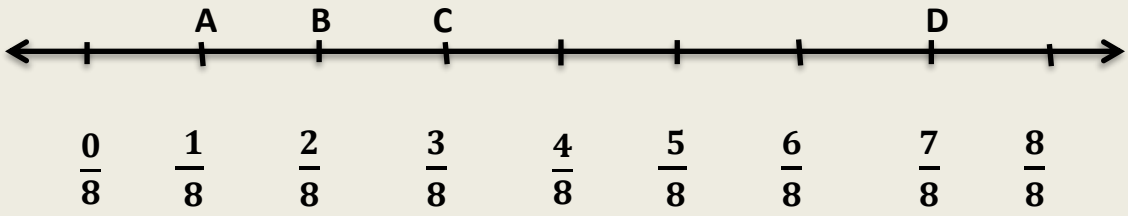
$\frac{2}{4} = \frac{1}{2} = B$

$\frac{3}{4} = C$

$\frac{4}{4} = D$

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

Ans.



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

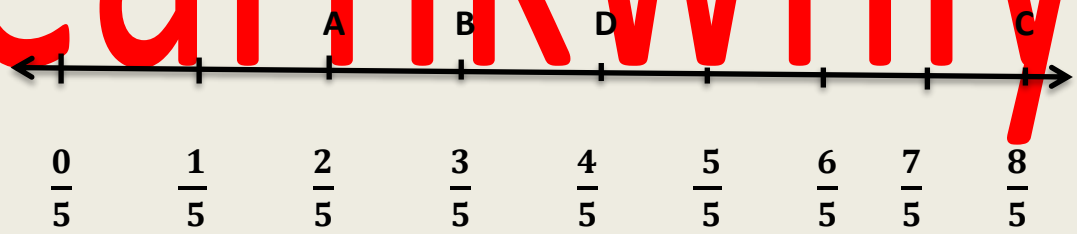
$\frac{2}{8} = B$

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

$\frac{7}{8} = D$

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

Ans.



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

$\frac{3}{5} = B$

$\frac{8}{5} = C$

$\frac{4}{5} = D$

2. Express the following as mixed fractions:

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

Ans.

$\frac{20}{3} = 9\frac{2}{3}$

6

$3\overline{)20}$

-18

2

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

Ans.

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

2

$5\overline{)11}$

-10

1

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

Ans.

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

2

$7\overline{)17}$

-14

3

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

Ans.

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

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

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

Ans.

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

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

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

Ans.

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

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

3. Express the following as improper fractions:

(a) $7\frac{3}{4}$

Ans.

$7\frac{3}{4}$

We can express a mixed fraction as an improper fraction as

$$= \frac{(whole \times Denominator)+Numerator}{Denominator}$$

$$= \frac{(7 \times 4)+3}{4} = \frac{31}{4}$$

(b) $5\frac{6}{7}$

Ans.

$5\frac{6}{7}$

We can express a mixed fraction as an improper fraction as

$$= \frac{(whole \times Denominator)+Numerator}{Denominator}$$

$$= \frac{(5 X 7)+6}{7} = \frac{41}{7}$$

(c) $2\frac{5}{6}$

Ans.

$2\frac{5}{6}$

We can express a mixed fraction as an improper fraction as

$$= \frac{(whole \times Denominator)+Numerator}{Denominator}$$

$$= \frac{(2 \times 6)+5}{6} = \frac{17}{6}$$

(d) $10\frac{3}{5}$

Ans.

$10\frac{3}{5}$

We can express a mixed fraction as an improper fraction as

$$= \frac{(whole\ X\ Denominator)+Numerator}{Denominator}$$

$$= \frac{(10 \times 5)+3}{5} = \frac{53}{5}$$

(e) $9\frac{3}{7}$

Ans.

$9\frac{3}{7}$

We can express a mixed fraction as an improper fraction as

$$= \frac{(whole \times Denominator)+Numerator}{Denominator}$$

$$= \frac{(9 \times 7)+3}{7} = \frac{66}{7}$$

(f) $8\frac{4}{9}$

Ans.

$8\frac{4}{9}$

We can express a mixed fraction as an improper fraction as

$$= \frac{(whole \times Denominator)+Numerator}{Denominator}$$

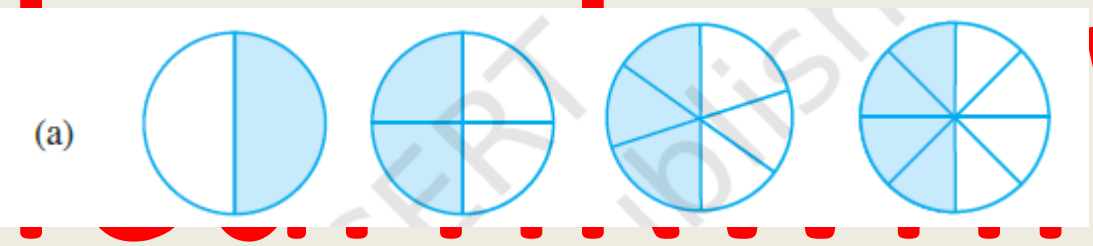
$$= \frac{(8 \times 9)+4}{9} = \frac{76}{9}$$

EXERCISE 7.3

NCERT SOLUTION

1. Write the fractions. Are all these fractions equivalent?

(a)



Ans.

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

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

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

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

Hence, all fractions are equivalent fractions.

(b)

(b) 

Ans.

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

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

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

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

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

Hence, all fractions are not equivalent fractions.

2. Write the fractions and pair up the equivalent fractions from each row.

3. Replace ☐ in each of the following by the correct number

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

Ans.

$\frac{2}{7} = \frac{8}{\square}$

$\frac{2 \times 4}{7 \times 4} = \frac{8}{28}$

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

Ans.

$\frac{5}{8} = \frac{10}{\square}$

$\frac{5 \times 2}{8 \times 2} = \frac{10}{16}$

(c) $\frac{3}{5} = \frac{\square}{20}$

Ans.

$\frac{3}{5} = \frac{\square}{20}$

$\frac{3 \times 4}{5 \times 4} = \frac{12}{20}$

(d) $\frac{45}{60} = \frac{15}{\square}$

Ans.

$\frac{45}{60} = \frac{15}{\square}$

$\frac{45 \div 3}{60 \div 3} = \frac{15}{20}$

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

Ans.

$$\frac{18}{24} = \frac{\square}{4}$$

$$\frac{18 \div 6}{24 \div 6} = \frac{3}{4}$$

4. Find the equivalent fraction of $\frac{3}{5}$ having

(a) Denominator 20

Ans.

$$\frac{3}{5} = \frac{\square}{20}$$

$$\frac{3 \times 4}{5 \times 4} = \frac{12}{20}$$

(b) Numerator 9

Ans.

$$\frac{3}{5} = \frac{9}{\square}$$

$$\frac{3 \times 3}{5 \times 3} = \frac{9}{15}$$

(c) Denominator 30

Ans.

$$\frac{3}{5} = \frac{\square}{30}$$

$$\frac{3 \times 6}{5 \times 6} = \frac{18}{30}$$

(d) Numerator 27

Ans.

$$\frac{3}{5} = \frac{27}{\square}$$

$$\frac{3 \times 9}{5 \times 9} = \frac{27}{45}$$

5. Find the equivalent fraction of $\frac{36}{48}$ with

(a) Numerator 9

Ans.

$$\frac{36}{48} = \frac{9}{\square}$$

$$\frac{36 \div 4}{48 \div 4} = \frac{9}{12}$$

(b) Denominator 4

Ans.

$$\frac{36}{48} = \frac{\square}{4}$$

$$\frac{36 \div 12}{48 \div 12} = \frac{3}{4}$$

6. Check whether the given fractions are equivalent:

(a) $\frac{5}{9}$ and $\frac{30}{54}$

Ans.

$$\frac{5}{9} = \frac{30}{54}$$

By cross multiplication, we have

$$5 \times 54 = 270$$

$$9 \times 30 = 270$$

$5 \times 54 = 9 \times 30$

$270 = 270$

$\therefore \frac{5}{9}$ and $\frac{30}{54}$ are equivalent fractions.

(b) $\frac{3}{10}$ and $\frac{12}{50}$

Ans.

$\frac{3}{10} = \frac{12}{50}$

By cross multiplication, we have

$3 \times 50 = 150$

$10 \times 12 = 120$

$3 \times 50 = 10 \times 12$

$150 \neq 120$

$\therefore \frac{3}{10}$ and $\frac{12}{50}$ are not equivalent fractions.

(c) $\frac{7}{13}$ and $\frac{5}{11}$

Ans.

By cross multiplication, we have

$7 \times 11 = 77$

$13 \times 5 = 75$

$7 \times 11 = 13 \times 5$

$77 \neq 75$

$\therefore \frac{7}{13}$ and $\frac{5}{11}$ are not equivalent fractions.

7. Reduce the following fractions to simplest form:

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

Ans.

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

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

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

Ans.

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

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

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

Ans.

$$\frac{84}{98} = \frac{84 \div 12}{98 \div 12} = \frac{7}{8}$$

$$\frac{84}{98} = \frac{7}{8}$$

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

Ans.

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

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

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

Ans.

$$\frac{7}{28} = \frac{7 \div 7}{28 \div 7} = \frac{1}{3}$$

$$\frac{7}{28} = \frac{1}{3}$$

8. Ramesh had 20 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?

Ans.

Pencils with Ramesh = 20 pencils

Pencils used by Ramesh = 10 pencils

Fraction of pencils used by Ramesh $= \frac{10}{20} = \frac{1}{2}$

Pencils with Sheelu = 50 pencils

Pencils used by Sheelu = 25 pencils

Fraction of pencils used by Sheelu $= \frac{25}{50} = \frac{1}{2}$

Pencils with Jamaal = 80 pencils

Pencils used by Ramesh = 40 pencils

Fraction of pencils used by Ramesh $= \frac{40}{80} = \frac{1}{2}$

Yes, they all had used sae number of pencils.

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)** $\frac{9}{10}$

Ans.

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

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

(i) ⟶ (d)

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

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

(ii) ⟶ (e)

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

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

(iii) ⟶ (a)

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

$\frac{18 \div 18}{36 \div 18} = \frac{1}{2}$

(iv) ⟶ (c)

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

$\frac{22 \div 11}{55 \div 11} = \frac{2}{5}$

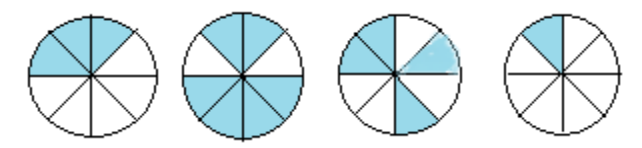
(v) ⟶ (b)

EXERCISE 7.4

NCERT SOLUTION

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

(a)



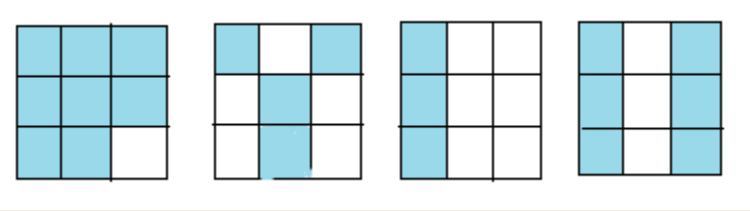
Ans.

$\frac{3}{8}, \frac{6}{8}, \frac{4}{8}, \frac{1}{8}$

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)



Ans.

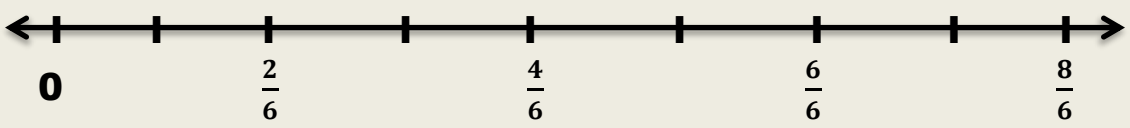
$\frac{8}{9}, \frac{4}{9}, \frac{3}{9}, \frac{6}{9}$

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) Show $\frac{2}{6}, \frac{4}{6}, \frac{8}{6}$ and $\frac{6}{6}$ on the number line. Put appropriate signs between the fractions given.

Ans.



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

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

$\frac{3}{6} \square 0$

$\frac{3}{6} > \frac{0}{6}$

$\frac{1}{6} \square \frac{6}{6}$

$\frac{1}{6} < \frac{6}{6}$

$\frac{8}{6} \square \frac{5}{6}$

$\frac{8}{6} > \frac{5}{6}$

2. Compare the fractions and put an appropriate sign.

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

Ans.

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

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

Ans.

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

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

Ans.

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

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

Ans.

$\frac{3}{5} < \frac{3}{7}$

3. Make five more such pairs and put appropriate signs.

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

Ans.

$\frac{3}{5} < \frac{2}{5}$

(b) $\frac{1}{8} \square \frac{4}{8}$

Ans.

$\frac{1}{8} < \frac{4}{8}$

(c) $\frac{4}{5} \square \frac{1}{2}$

Ans.

$\frac{4}{5} > \frac{1}{2}$

(d) $\frac{3}{7} \square \frac{1}{7}$

Ans.

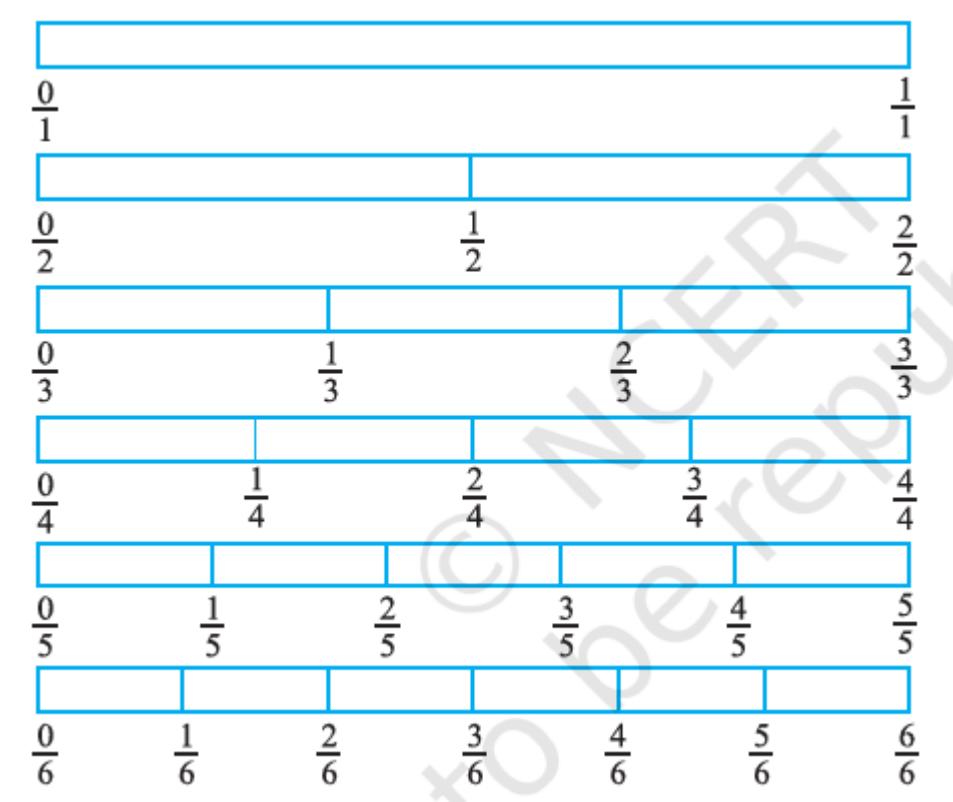
$\frac{3}{7} < \frac{1}{7}$

(e) $\frac{1}{3} \square \frac{1}{5}$

Ans.

$\frac{1}{3} > \frac{1}{5}$

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



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

Ans.

$\frac{1}{6} < \frac{1}{3}$

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

Ans.

$\frac{3}{4} > \frac{2}{6}$

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

Ans.

$\frac{2}{3} > \frac{2}{4}$

(d) $\frac{6}{6} \square \frac{3}{3}$

Ans.

$\frac{6}{6} = \frac{3}{3}$

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

Ans.

$\frac{5}{6} < \frac{5}{5}$

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

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

Ans.

$\frac{1}{2} > \frac{1}{5}$

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

Ans.

$\frac{2}{4} = \frac{3}{6}$

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

Ans.

$\frac{2}{5} < \frac{2}{3}$

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

Ans.

$\frac{3}{4} > \frac{2}{8}$

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

Ans.

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

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

Ans.

$\frac{7}{9} > \frac{3}{9}$

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

Ans.

$$\frac{1}{4} = \frac{2}{8}$$

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

Ans.

$$\frac{6}{10} < \frac{4}{5}$$

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

Ans.

$$\frac{3}{4} < \frac{7}{8}$$

(j) $\frac{6}{10} \square \frac{3}{5}$

Ans.

$$\frac{6}{10} < \frac{3}{5}$$

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

Ans.

$$\frac{5}{7} = \frac{15}{21}$$

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) $\frac{2}{12}$

Ans.

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

(b) $\frac{3}{15}$

Ans.

$$\frac{3 \div 3}{15 \div 3} = \frac{1}{5}$$

(c) $\frac{8}{50}$

Ans.

$\frac{8 \div 2}{50 \div 2} = \frac{4}{25}$

(d) $\frac{16}{100}$

Ans.

$\frac{16 \div 4}{100 \div 4} = \frac{4}{25}$

(e) $\frac{10}{60}$

Ans.

$\frac{10 \div 10}{60 \div 10} = \frac{1}{6}$

(f) $\frac{15}{75}$

Ans.

$\frac{15 \div 15}{75 \div 15} = \frac{1}{5}$

(g) $\frac{12}{60}$

Ans.

$\frac{12 \div 12}{60 \div 12} = \frac{1}{6}$

(h) $\frac{16}{96}$

Ans.

$\frac{16 \div 16}{96 \div 16} = \frac{1}{6}$

(i) $\frac{12}{75}$

Ans.

$\frac{12 \div 3}{75 \div 3} = \frac{4}{25}$

(j) $\frac{12}{72}$

Ans.

$\frac{12 \div 12}{72 \div 12} = \frac{1}{6}$

(k) $\frac{3}{18}$

Ans.

$\frac{3 \div 3}{18 \div 3} = \frac{1}{6}$

(l) $\frac{4}{25}$

Ans.

$\frac{4 \div 1}{25 \div 1} = \frac{4}{25}$

7. Find answers to the following. Write and indicate how you solved them.

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

Ans.

By cross multiplying, we get

$5 \times 5 = 25$ and $4 \times 9 = 36$

Since $25 \neq 36$

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

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

Ans.

By cross multiplying, we get

$9 \times 9 = 81$ and $16 \times 5 = 80$

Since $81 \neq 80$

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

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

Ans.

By cross multiplying, we get

$4 \times 20 = 80$ and $16 \times 5 = 80$

Since $80 = 80$

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

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

Ans.

By cross multiplying, we get

$1 \times 30 = 30$ and $4 \times 15 = 60$

Since $30 \neq 60$

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

8. Ila read 25 pages of a book containing 100 pages. Lalita read $\frac{2}{5}$ of the same book. Who read less?

Ans.

Ila read 25 pages of a book containing 100 pages

Fraction of pages that ila read $= \frac{25}{100} = \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$

Lalita reads $\frac{2}{5}$ of the same book.

Comparing $\frac{1}{4}$ and $\frac{2}{5}$ we get,

$1 \times 5 = 5$ and $2 \times 4 = 8$

Since $5 < 8$

$\therefore \frac{1}{4} < \frac{2}{5}$

Hence, illa reads less pages.

9. Rafiq exercised for $\frac{3}{6}$ of an hour, while Rohit exercised for $\frac{3}{4}$ of an hour. Who exercised for a longer time?

Ans.

Rafiq exercised for $\frac{3}{6}$ of an hour.

Rohit exercised for $\frac{3}{4}$ of an hour.

Comparing $\frac{3}{6}$ and $\frac{3}{4}$ we get,

$3 \times 4 = 12$ and $3 \times 6 = 18$

Since $12 < 18$

$\therefore \frac{3}{4} < \frac{3}{6}$

Hence, Rohit exercised for longer time.

10. In a class A of 25 students, 20 passed with 60% or more marks; in another class B of 30 students, 24 passed with 60% or more marks. In which class was a greater fraction of students getting with 60% or more marks?

Ans.

In class A, 20 students passed with 60% marks out of 25 students.

$\therefore$ Fraction of students getting 60% marks $= \frac{20}{25} = \frac{20 \div 5}{25 \div 5} = \frac{4}{5}$

In class B, 24 students passed with 60% marks out of 30 students.

$\therefore$ Fraction of students getting 60% marks $= \frac{24}{30} = \frac{24 \div 6}{30 \div 6} = \frac{4}{5}$

Comparing the fraction we get, $\frac{4}{5} = \frac{4}{5}$

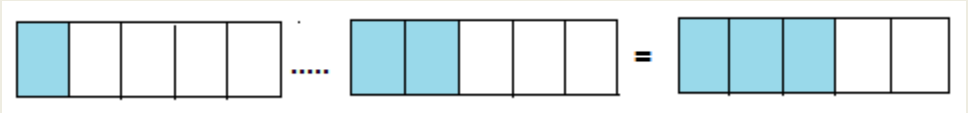
Hence, both the class A and B have the same fractions.

EXERCISE 7.5

NCERT SOLUTION

1. Write these fractions appropriately as additions or subtractions:

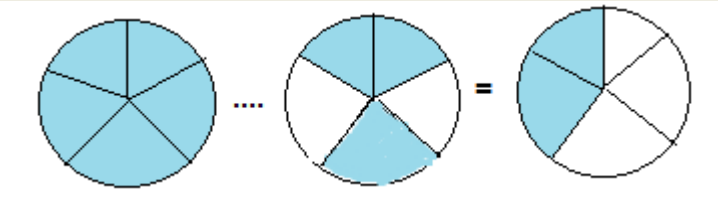
(a)



Ans.

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

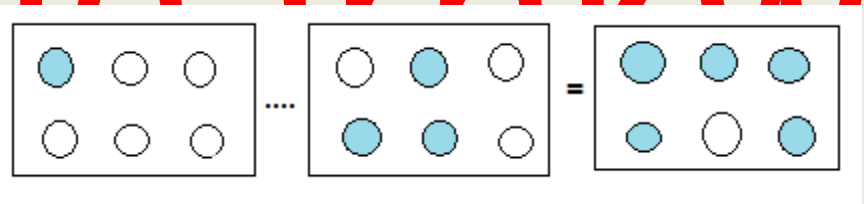
(b)



Ans.

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

(c)



Ans.

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

2. Solve:

(a) $\frac{1}{18} + \frac{1}{18}$

Ans.

$\frac{1}{18} + \frac{1}{18} = \frac{2}{18}$

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

Ans.

$\frac{8}{15} + \frac{3}{15} = \frac{11}{15}$

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

Ans.

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

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

Ans.

$\frac{1}{22} + \frac{21}{22} = \frac{22}{22} = 1$

(e) $\frac{12}{15} - \frac{7}{15}$

Ans.

$\frac{12}{15} - \frac{7}{15} = \frac{5}{15}$

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

Ans.

$\frac{5}{8} + \frac{3}{8} = \frac{8}{8} = 1$

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

Ans.

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

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

Ans.

$\frac{1}{4} + \frac{0}{4} = \frac{1}{4}$

(i) $3 + \frac{12}{5}$

Ans.

$3 + \frac{12}{5} = \frac{15-12}{5} = \frac{3}{5}$

3. Shubham painted $\frac{2}{3}$ of the wall space in his room. His sister Madhavi helped and painted $\frac{1}{3}$ of the wall space. How much did they paint together?

Ans.

Fraction of wall painted by Shubham $= \frac{2}{3}$

Fraction of wall painted by madhavi $= \frac{1}{3}$

Total fraction when they both painted together $= \frac{2}{3} + \frac{1}{3} = \frac{3}{3}$

4. Fill in the missing fractions.

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

Ans.

$\frac{7}{10} - \frac{4}{10} = \frac{3}{10}$

The missing fraction is $\frac{4}{10}$

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

Ans.

$\frac{8}{21} - \frac{3}{21} = \frac{5}{21}$

The missing fraction is $\frac{8}{21}$

(c) $\square - \frac{3}{6} = \frac{3}{6}$

Ans.

$\frac{6}{6} - \frac{3}{6} = \frac{3}{6}$

The missing fraction is $\frac{6}{6}$

(d) $\square + \frac{5}{27} = \frac{12}{27}$

Ans.

$\frac{7}{27} + \frac{5}{27} = \frac{12}{27}$

The missing fraction is $\frac{7}{27}$

5. Javed was given $\frac{5}{7}$ of a basket of oranges. What fraction of oranges was left in the basket?

Ans.

Let the total number of oranges in the basket $= \frac{5}{7}$

Fraction of oranges given by Javed $= \frac{5}{7}$

Remaining Fraction $= 1 - \frac{5}{7} = \frac{7}{7} - \frac{5}{7} = \frac{7-5}{7} = \frac{2}{7}$

EXERCISE 7.6

NCERT SOLUTION

1. Solve

(a) $\frac{2}{3} + \frac{1}{7}$

Ans.

L.C.M of 3 and 7 = 21

$\therefore \frac{2}{3} + \frac{1}{7} = \frac{2 \times 7 + 1 \times 3}{21} = \frac{14+3}{21} = \frac{17}{21}$

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

Ans.

L.C.M of 10 and 15 = 30

$\therefore \frac{3}{10} + \frac{7}{15} = \frac{3 \times 3 + 7 \times 2}{30} = \frac{9+14}{30} = \frac{23}{30}$

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

Ans.

L.C.M of 9 and 7 = 63

$\therefore \frac{4}{9} + \frac{2}{7} = \frac{4 \times 7 + 2 \times 9}{63} = \frac{28 + 18}{63} = \frac{46}{63}$

(d) $\frac{5}{7} + \frac{1}{3}$

Ans.

L.C.M of 7 and 3 = 21

$\therefore \frac{5}{7} + \frac{1}{3} = \frac{5 \times 3 + 1 \times 7}{21} = \frac{15 + 7}{21} = \frac{22}{21} = 1\frac{1}{21}$

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

Ans.

L.C.M of 5 and 6 = 30

$\therefore \frac{2}{5} + \frac{1}{6} = \frac{2 \times 6 + 1 \times 5}{30} = \frac{12 + 5}{30} = \frac{17}{30}$

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

Ans.

L.C.M of 5 and 3 = 15

$\therefore \frac{4}{5} + \frac{2}{3} = \frac{3 \times 4 + 5 \times 2}{15} = \frac{12 + 10}{15} = \frac{22}{15} = 1\frac{7}{15}$

(g) $\frac{3}{4} - \frac{1}{3}$

Ans.

L.C.M of 4 and 3 = 12

$\therefore \frac{3}{4} - \frac{1}{3} = \frac{3 \times 3 - 1 \times 4}{12} = \frac{9 - 4}{12} = \frac{5}{12}$

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

Ans.

L.C.M of 6 and 3 = 6

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

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

Ans.

L.C.M of 3, 4 and 2 = 12

$\therefore \frac{2}{3}+\frac{3}{4}+\frac{1}{2}=\frac{4\times2+3\times3+6\times1}{12}=\frac{8+9+6}{12}=\frac{23}{12}=1\frac{11}{12}$

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

Ans.

L.C.M of 2, 3 and 6 = 6

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

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

Ans.

$\frac{4}{3}+\frac{11}{3}$

L.C.M of 3 and 3 = 3

$\therefore \frac{4}{3}+\frac{11}{3}=\frac{4+11}{3}=\frac{15}{3}=5$

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

Ans.

$\frac{14}{3}+\frac{13}{4}$

L.C.M of 3 and 4 = 12

$\therefore \frac{14}{3} + \frac{13}{4} = \frac{14 \times 4 + 13 \times 3}{12} = \frac{56 + 39}{12} = \frac{95}{12} = 7\frac{11}{12}$

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

Ans.

L.C.M of 5 and 5 = 5

$\therefore \frac{16}{5} - \frac{7}{5} = \frac{16-7}{5} = \frac{9}{5} = 1\frac{4}{5}$

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

Ans.

L.C.M of 3 and 2 = 6

$\therefore \frac{4}{3} - \frac{1}{2} = \frac{4 \times 2 - 3 \times 1}{6} = \frac{8-3}{6} = \frac{5}{6}$

2. Sarita bought $\frac{2}{5}$ metre of ribbon and Lalita $\frac{3}{4}$ metre of ribbon. What is the total length of the ribbon they bought?

Ans.

Ribbon bought by sarita $= \frac{2}{5}$ m

Ribbon bought by lalita $= \frac{3}{4}$ m

Total length of ribbon $= \frac{2}{5} + \frac{3}{4}$

L.C.M of 5 and 4 = 20

$\frac{2}{5} + \frac{3}{4} = \frac{2 \times 4 + 3 \times 5}{20} = \frac{8+15}{20} = \frac{23}{20} = 1\frac{3}{20}$m

Therefore, they bought $1\frac{3}{20}$m ribbon.

3. Naina was given $1\frac{1}{2}$ piece of cake and Najma was given $1\frac{1}{3}$ piece of cake. Find the total amount of cake was given to both of them.

Ans.

Cake taken by Naina $= 1\frac{1}{2}$ piece of cake

Cake taken by Najma $= 1\frac{1}{3}$ piece of cake

Total cake taken $= 1\frac{1}{2} + 1\frac{1}{3}$

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

L.C.M of 2 and 3 $= 6$

$\frac{3}{2} + \frac{4}{3} = \frac{3\times3+4\times2}{6} = \frac{9+8}{6} = \frac{17}{6} = 2\frac{5}{6}$

Therefore, the total cake taken is $2\frac{5}{6}$.

4. Fill in the boxes:

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

Ans.

$\frac{1}{4} + \frac{5}{8} = \frac{2+5}{8} = \frac{7}{8}$

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

Ans.

$\frac{1}{2} + \frac{1}{5} = \frac{5+2}{10} = \frac{7}{10}$

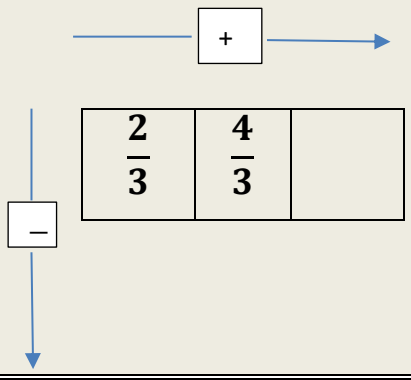
(c) $\frac{1}{2} - \square = \frac{1}{6}$

Ans.

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

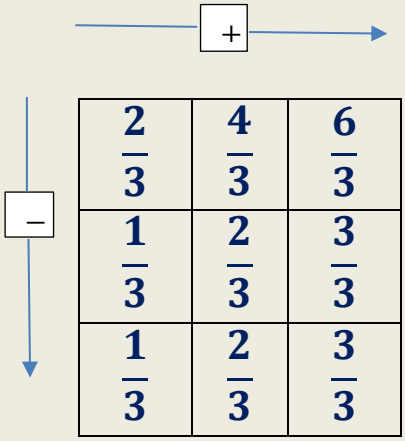
5. Complete the addition-subtraction box.

(a)



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

Ans.

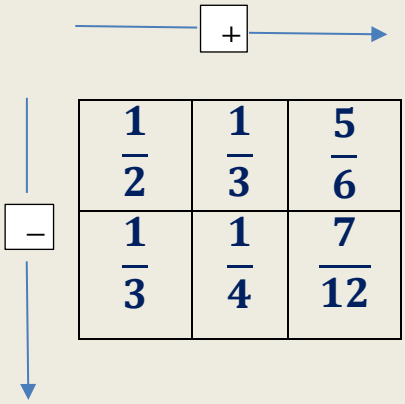


$\frac{2}{3}$	$\frac{4}{3}$	$\frac{6}{3}$
$\frac{1}{3}$	$\frac{2}{3}$	$\frac{3}{3}$
$\frac{1}{3}$	$\frac{2}{3}$	$\frac{3}{3}$

(b)

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

Ans.



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

$\frac{1}{6}$	$\frac{1}{12}$	$\frac{3}{12}$

6. A piece of wire $\frac{7}{8}$ metre long broke into two pieces. One piece was $\frac{1}{4}$ metre long. How long is the other piece?

Ans.

Total length of wire $= \frac{7}{8}$ metre.

Length of one piece $= \frac{1}{4}$ metre

Length of other piece $= \frac{7}{8} - \frac{1}{4}$

L.C.M of 4 and 8 $= 8$

$$\frac{7}{8} - \frac{1}{4} = \frac{1 \times 7 - 2 \times 1}{8} = \frac{7-2}{8} = \frac{5}{8} \text{ metre.}$$

7. Nandini's house is $\frac{9}{10}$ km from her school. She walked some distance and then took a bus for $\frac{1}{2}$ km to reach the school. How far did she walk?

Ans.

Distance between school and house $= \frac{9}{10}$ km

Distance covered by bus $= \frac{1}{2}$ km

Remaining distance $= \frac{9}{10} - \frac{1}{2}$

L.C.M of 10 and 2 $= 10$

$$\frac{9}{10} - \frac{1}{2} = \frac{9 \times 1 - 1 \times 5}{10} = \frac{9-5}{10} = \frac{4}{10} = \frac{2}{10} \text{ km}$$

8. Asha and Samuel have bookshelves of the same size partly filled with books. Asha's shelf is $\frac{5}{6}$th full and Samuel's shelf is $\frac{2}{5}$ th full. Whose bookshelf is more full? By what fraction?

Ans.

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

$\frac{5 \times 5}{6 \times 5} = \frac{25}{30}$

$\frac{2 \times 6}{5 \times 6} = \frac{12}{30}$

$\frac{25}{30} > \frac{12}{30} = \frac{5}{6} > \frac{2}{5}$

∴ Asha's bookshelf is more covered than Samuel's.

Difference $= \frac{25}{30} - \frac{12}{30} = \frac{13}{30}$

9. Jaidev takes $2\frac{1}{5}$ minutes to walk across the school ground. Rahul takes $\frac{7}{4}$ minutes to do the same. Who takes less time and by what fraction?

Ans.

Time taken by Jaidev $= 2\frac{1}{5}$ minutes $= \frac{11}{5}$ minutes

Time taken by Rahul $= \frac{7}{4}$ minutes

Difference $= \frac{11}{5} - \frac{7}{4}$

L.C.M of 5 and $4 = 20$

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

Thus, Rahul takes less time, which is $\frac{9}{20}$minutes

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