# St. Andrews Scots School

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Session: 2026-2027

Class: V Subject: Mathematics Unit 5– Fractions

**Work to be done:**

**Ex-5 A:** Q1, Q2, Q3, Q4, Q5 in Book.

Q6 – (a ,c, e) in Notebook.

Q7 – (a, b) in Notebook.

Q8 – (a ,b) in Notebook.

Q9 – (b) in Notebook.

Q10 – (d, e ,f) in Notebook.

Q11 in Book.

**Ex-5 B:** Q1 in Book.

Q2 – (b, d, f, h) in Notebook.

Q3 – (a ,c,e, g) in Book.

Q4 – (c ,d) in Notebook.

Q5 – ( a, b) in Notebook.

**Ex-5 C:** Q1 in Book.

Q2– (a, b,c) in Notebook.

Q3 – (b, c, d) in Notebook.

Q4 – (c, d ) in Notebook.

**Ex-5 D:** (ii, iv, vi ) in Notebook.

**Ex-5 E:** Q1 – (b, d, f) in Notebook.

Q2 – (a , b, c) in Notebook.

Q3 – (b ,c, f) in Notebook.

Q4 – (b ,c ) in Notebook.

**Ex-5 F:** Q1, Q4 , Q7 , Q8 , Q10 , Q12 in Notebook.

**Review time**

**Worksheet**

# Chapter 5: Fractions

## Exercise 5A

**1.** Unit fractions are $\frac{1}{2}, \frac{1}{11}, \frac{1}{9}$ and $\frac{1}{191}$

**2.** Like fractions are: (a) $\frac{3}{5}, \frac{7}{5}$ (d) $\frac{2}{9}, \frac{5}{9}$

**3.** Unlike fractions are: (b) $\frac{9}{10}, \frac{8}{9}$ (c) $\frac{2}{5}, \frac{2}{7}$ (d) $\frac{6}{11}, \frac{4}{13}$

**4.** Proper fractions are: $\frac{2}{7}$ and $\frac{9}{13}$

**5.** Improper fractions are: $\frac{12}{5}, \frac{19}{8}, \frac{23}{3}$

**6.** (a) $2\frac{1}{3} = \frac{2\times3+1}{3} = \frac{6+1}{3} = \frac{7}{3}$ (b) $19\frac{1}{7} = \frac{19\times7+1}{7} = \frac{133+1}{7} = \frac{134}{7}$

(c) $31\frac{3}{4} = \frac{31\times4+3}{4} = \frac{124+3}{4} = \frac{127}{4}$

(d) $29\frac{7}{9} = \frac{29\times9+7}{9} = \frac{261+7}{9} = \frac{268}{9}$

(e) $111\frac{4}{13} = \frac{111\times13+4}{13} = \frac{1443+4}{13} = \frac{1447}{13}$

**7.** (a) $\frac{131}{11} = 11\frac{10}{11}$

$$\begin{array}{r|l} 11 & 131 \\ & -11 \\ \hline & 21 \\ & -11 \\ \hline & 10 \end{array}$$ 11

(b) $\frac{67}{3} = 22\frac{1}{3}$

$$\begin{array}{r|l} 3 & 67 \\ & -6 \\ \hline & 7 \\ & -6 \\ \hline & 1 \end{array}$$ 22

(c) $\frac{89}{7} = 12\frac{5}{7}$

$$\begin{array}{r|l} 7 & 89 \\ & -7 \\ \hline & 19 \\ & -14 \\ \hline & 5 \end{array}$$ 12

(d) $\frac{29}{3} = 9\frac{2}{3}$

$$\begin{array}{r|l} 3 & 29 \\ & -27 \\ \hline & 2 \end{array}$$ 9

(e) $\frac{243}{5} = 48\frac{3}{5}$

$$\begin{array}{r|l} 5 & 243 \\ & -20 \\ \hline & 43 \\ & -40 \\ \hline & 3 \end{array}$$ 48

**8.** (a) $\frac{9}{11}\times\frac{2}{2} = \frac{18}{22}$

$\frac{9}{11}\times\frac{3}{3} = \frac{27}{33}$

$\frac{9}{11}\times\frac{4}{4} = \frac{36}{44}$

$\frac{9}{11}\times\frac{5}{5} = \frac{45}{55}$

$\frac{9}{11}\times\frac{6}{6} = \frac{54}{66}$

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

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

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

$\frac{3}{5}\times\frac{5}{5} = \frac{15}{25}$

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

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Hence The five equivalent fractions are:

$\frac{18}{22}, \frac{27}{33}, \frac{36}{44}, \frac{45}{55}, \frac{54}{66}$

The five equivalent fractions are:

$\frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \frac{15}{25}, \frac{18}{30}$

(c) $\frac{6}{17} \times \frac{2}{2} = \frac{12}{34}$

$\frac{6}{17} \times \frac{3}{3} = \frac{18}{51}$

$\frac{6}{17} \times \frac{4}{4} = \frac{24}{68}$

$\frac{6}{17} \times \frac{5}{5} = \frac{30}{85}$

$\frac{6}{17} \times \frac{6}{6} = \frac{36}{102}$

The five equivalent fractions are:

$\frac{12}{34}, \frac{18}{51}, \frac{24}{68}, \frac{30}{85}, \frac{36}{102}$

**9.** (a) $\frac{5}{6} \times \frac{12}{12} = \frac{60}{72}$ (b) $\frac{5}{6} \times \frac{7}{7} = \frac{35}{42}$

**10.** (a) $\frac{6}{13}$ and $\frac{42}{91}$

$6 \times 91 = 546$ and $42 \times 13 = 546$ (By cross multiplication)

Since, $6 \times 91 = 42 \times 13$

Hence, $\frac{6}{13}$ and $\frac{42}{91}$ are equivalent fractions.

(b) $\frac{12}{50}$ and $\frac{48}{205}$

$12 \times 205 = 2460$ and $48 \times 50 = 2400$ (By cross multiplication)

Since, $12 \times 205 \neq 48 \times 50$

Hence, $\frac{12}{50}$ and $\frac{48}{205}$ are not equivalent fractions.

(c) $\frac{3}{7}$ and $\frac{36}{84}$

$3 \times 84 = 252$ and $36 \times 7 = 252$ (By cross multiplication)

Since, $3 \times 84 = 36 \times 7$

Hence, $\frac{3}{7}$ and $\frac{36}{84}$ are equivalent fractions.

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(d) $\frac{3}{5}$ and $\frac{12}{50}$

$3 \times 50 = 150$ and $12 \times 5 = 60$ (By cross multiplication)

Since, $3 \times 50 \neq 12 \times 5$

Hence, $\frac{3}{5}$ and $\frac{12}{50}$ are not equivalent fractions.

(e) $\frac{7}{11}$ and $\frac{42}{66}$

$7 \times 66 = 462$ and $42 \times 11 = 462$ (By cross multiplication)

Since, $7 \times 66 = 42 \times 11$

Hence, $\frac{7}{11}$ and $\frac{42}{66}$ are equivalent fractions.

(f) $\frac{5}{8}$ and $\frac{16}{24}$

$5 \times 24 = 120$ and $16 \times 8 = 128$ (By cross multiplication)

Since, $5 \times 24 \neq 16 \times 8$

Hence, $\frac{5}{8}$ and $\frac{16}{24}$ are not equivalent fractions.

**11.** (a) $\frac{21}{28} = \frac{3}{\boxed{4}}$ (b) $\frac{35}{49} = \frac{\boxed{5}}{7}$ (c) $\frac{25}{30} = \frac{\boxed{5}}{6}$

(d) $\frac{2}{5} = \frac{\boxed{10}}{25}$ (e) $\frac{3}{7} = \frac{\boxed{21}}{49}$ (f) $\frac{49}{77} = \frac{7}{\boxed{11}}$

(g) $\frac{56}{63} = \frac{8}{\boxed{9}}$ (h) $\frac{24}{36} = \frac{\boxed{2}}{3}$

## Exercise 5B

**1.** (a) $\frac{35}{54}$ and (d) $\frac{28}{57}$ are in the simplest form.

**2.** (a) $\frac{40}{48}$, HCF of 40 and 48

$$\begin{array}{r|l} 40 & 48 \\ -40 & \\ \hline 8 & 40 \\ -40 & \\ \hline 0 & \end{array} \quad \begin{array}{l} (1 \\ (5 \end{array}$$

(b) $\frac{56}{80}$, HCF of 56 and 80

$$\begin{array}{r|l} 56 & 80 \\ -56 & \\ \hline 24 & 56 \\ -48 & \\ \hline 8 & 24 \\ -24 & \\ \hline 0 & \end{array} \quad \begin{array}{l} (1 \\ (2 \\ (3 \end{array}$$

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HCF = 8

Thus, $\frac{40 \div 8}{48 \div 8} = \frac{5}{6}$

Hence, $\frac{40}{48}$ in the lowest term is $\frac{5}{6}$.

HCF = 8

Thus, $\frac{56 \div 8}{80 \div 8} = \frac{7}{10}$

Hence, $\frac{56}{80}$ in the lowest term is $\frac{7}{10}$.

(c) $\frac{36}{45}$, HCF of 36 and 45

$$
\begin{array}{r}
36 \overline{)\,45\,(1} \\
-36 \\
\hline
9 \overline{)\,36\,(4} \\
-36 \\
\hline
0 \\
\hline
\end{array}
$$

HCF = 9

Thus, $\frac{36 \div 9}{45 \div 9} = \frac{4}{5}$

Hence, $\frac{36}{45}$ in the lowest term is $\frac{4}{5}$.

(d) $\frac{70}{90}$, HCF of 70 and 90

$$
\begin{array}{r}
70 \overline{)\,90\,(1} \\
-70 \\
\hline
20 \overline{)\,70\,(3} \\
-60 \\
\hline
10 \overline{)\,20\,(2} \\
-20 \\
\hline
0 \\
\hline
\end{array}
$$

HCF = 10

Thus, $\frac{70 \div 10}{90 \div 10} = \frac{7}{9}$

Hence, $\frac{70}{90}$ in the lowest term is $\frac{7}{9}$.

(e) $\frac{25}{35}$, HCF of 25 and 35

$$
\begin{array}{r}
25 \overline{)\,35\,(1} \\
-25 \\
\hline
10 \overline{)\,25\,(2} \\
-20 \\
\hline
5 \overline{)\,10\,(2} \\
-10 \\
\hline
0 \\
\hline
\end{array}
$$

HCF = 5

(f) $\frac{42}{60}$, HCF of 42 and 60

$$
\begin{array}{r}
42 \overline{)\,60\,(1} \\
-42 \\
\hline
18 \overline{)\,42\,(2} \\
-36 \\
\hline
6 \overline{)\,18\,(3} \\
-18 \\
\hline
0 \\
\hline
\end{array}
$$

HCF = 6

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Thus, $\frac{25 \div 5}{35 \div 5} = \frac{5}{7}$

Hence, $\frac{25}{35}$ in the lowest term is $\frac{5}{7}$.

Thus, $\frac{42 \div 6}{60 \div 6} = \frac{7}{10}$

Hence, $\frac{42}{60}$ in the lowest term is $\frac{7}{10}$.

(g) $\frac{51}{68}$, HCF of 51 and 68

$$\begin{array}{r} 51 \overline{)\,68\,(1} \\ -\,51 \\ \hline 17 \overline{)\,51\,(3} \\ -\,51 \\ \hline 0 \end{array}$$

HCF = 17

Thus, $\frac{51 \div 17}{68 \div 17} = \frac{3}{4}$

Hence, $\frac{3}{4}$ is the lowest form of $\frac{51}{68}$.

(h) $\frac{38}{95}$, HCF of 38 and 95

$$\begin{array}{r} 38 \overline{)\,95\,(2} \\ -\,76 \\ \hline 19 \overline{)\,38\,(2} \\ -\,38 \\ \hline 0 \end{array}$$

HCF = 19

Thus, $\frac{38 \div 19}{95 \div 19} = \frac{2}{5}$

Hence, $\frac{2}{5}$ is the lowest form of $\frac{38}{95}$.

**3.** (a) $\frac{9}{13}, \frac{11}{13}$ $\quad \frac{11}{13} > \frac{9}{13}$

(b) $\frac{6}{11}, \frac{6}{7}$ $\quad \frac{6}{7} > \frac{6}{11}$

(c) $\frac{15}{29}, \frac{23}{29}$ $\quad \frac{23}{29} > \frac{15}{29}$

(d) $\frac{7}{9}, \frac{7}{13}$ $\quad \frac{7}{9} > \frac{7}{13}$

(e) $\frac{21}{31}, \frac{19}{31}$ $\quad \frac{21}{31} > \frac{19}{31}$

(f) $\frac{3}{11}, \frac{3}{17}$ $\quad \frac{3}{11} > \frac{3}{17}$

(g) $\frac{1}{4}, \frac{1}{5}$ $\quad \frac{1}{4} > \frac{1}{5}$

(h) $\frac{8}{9}, \frac{8}{13}$ $\quad \frac{8}{9} > \frac{8}{13}$

**4.** (a) $\frac{2}{17} < \frac{3}{17} < \frac{6}{17} < \frac{8}{17} < \frac{10}{17}$

(b) $\frac{7}{23} < \frac{7}{17} < \frac{7}{15} < \frac{7}{11} < \frac{7}{9}$

(c) $\frac{1}{11} < \frac{3}{11} < \frac{4}{11} < \frac{7}{11} < \frac{8}{11}$

(d) $\frac{3}{17} < \frac{3}{13} < \frac{3}{8} < \frac{3}{7} < \frac{3}{5}$

**5.** (a) $\frac{2}{5} > \frac{2}{7} > \frac{2}{11} > \frac{2}{13} > \frac{2}{15}$

(b) $\frac{31}{29} > \frac{25}{29} > \frac{17}{29} > \frac{11}{29} > \frac{6}{29}$

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(c) $\frac{13}{11} > \frac{13}{17} > \frac{13}{19} > \frac{13}{21} > \frac{13}{23}$ (d) $\frac{22}{31} > \frac{16}{31} > \frac{15}{31} > \frac{11}{31} > \frac{7}{31}$

**Exercise 5C**

**1.** (a) $\frac{3}{10} \otimes \frac{7}{15}$ (b) $\frac{1}{2} \otimes \frac{4}{5}$ (c) $\frac{4}{6} \ominus \frac{6}{9}$ (d) $\frac{13}{4} \otimes \frac{15}{3}$ (e) $\frac{11}{35} \otimes \frac{13}{28}$

(f) $\frac{11}{6} \otimes \frac{12}{5}$ (g) $\frac{5}{7} \oslash \frac{3}{8}$ (h) $\frac{3}{5} \otimes \frac{5}{8}$ (i) $\frac{4}{14} \otimes \frac{11}{7}$

**2.** (a) $6\frac{1}{5}, 3\frac{3}{10}$

$\Rightarrow \frac{31}{5}, \frac{33}{10}$

LCM of 5 and 10 is 10.

$\frac{31}{5} = \frac{31 \times 2}{5 \times 2} = \frac{62}{10}$

Clearly $\frac{62}{10} > \frac{33}{10}$

Hence $6\frac{1}{5} > 3\frac{3}{10}$

(b) $\frac{4}{1}, 1\frac{7}{9}$

$\frac{4}{1}, \frac{16}{9}$

LCM of 1 and 9 is 9.

$\frac{4}{1} = \frac{4}{1} \times \frac{9}{9} = \frac{36}{9}$

Clearly $\frac{36}{9} > \frac{16}{9}$

Hence $\frac{4}{1} > 1\frac{7}{9}$

(c) $3\frac{1}{7}, 5\frac{3}{9}$

$\frac{22}{7}, \frac{48}{9}$

LCM of 7 and 9 is 63.

$\frac{22}{7} = \frac{22}{7} \times \frac{9}{9} = \frac{198}{63}$

$\frac{48}{9} = \frac{48}{9} \times \frac{7}{7} = \frac{336}{63}$

Clearly $\frac{336}{63} > \frac{198}{63}$

$\frac{48}{9} > \frac{22}{7}$ Hence $5\frac{3}{9} > 3\frac{1}{7}$

(d) $5\frac{2}{6}, 1\frac{4}{3}$

$\Rightarrow \frac{32}{6}, \frac{7}{3}$

LCM of 3 and 6 is 6.

$\frac{7}{3} = \frac{7}{3} \times \frac{2}{2} = \frac{14}{6}$

Clearly $\frac{32}{6} > \frac{14}{6}$

Hence, $5\frac{2}{6} > 1\frac{4}{3}$

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(e) $6\frac{4}{3}, 5\frac{9}{11}$

$\Rightarrow \frac{22}{3}, \frac{64}{11}$

LCM of 3 and 11 is 33

$\frac{22}{3} = \frac{22}{3} \times \frac{11}{11} = \frac{242}{33}$

$\frac{64}{11} = \frac{64}{11} \times \frac{3}{3} = \frac{192}{33}$

Clearly $\frac{242}{33} > \frac{192}{33}$

Hence $6\frac{4}{3} > 5\frac{9}{11}$

(f) $2\frac{5}{9}, 7\frac{8}{9}$

$\Rightarrow \frac{23}{9}, \frac{71}{9}$

Denominator is same so compare directly with numbers.

Clearly $\frac{71}{9} > \frac{23}{9}$

Hence $7\frac{8}{9} > 2\frac{5}{9}$

**3.** (a) $\frac{1}{6}, \frac{3}{12}, \frac{7}{9}, \frac{2}{3}$

LCM of 6, 12, 9, 3

| | | | | |
|---|---|---|---|---|
| 3 | 6, | 12, | 9, | 3 |
| 3 | 2, | 4, | 3, | 1 |
| 2 | 2, | 4, | 1, | 1 |
| 2 | 1, | 2, | 1, | 1 |
| | 1, | 1, | 1, | 1 |

LCM = $3 \times 3 \times 2 \times 2 = 36$

$\frac{1}{6} = \frac{1}{6} \times \frac{6}{6} = \frac{6}{36}$

$\frac{3}{12} = \frac{3}{12} \times \frac{3}{3} = \frac{9}{36}$

$\frac{7}{9} = \frac{7}{9} \times \frac{4}{4} = \frac{28}{36}$

$\frac{2}{3} = \frac{2}{3} \times \frac{12}{12} = \frac{24}{36}$

Clearly, $\frac{6}{36} < \frac{9}{36} < \frac{24}{36} < \frac{28}{36}$

Hence, $\frac{1}{6} < \frac{3}{12} < \frac{2}{3} < \frac{7}{9}$

(b) $\frac{3}{10}, \frac{1}{5}, \frac{5}{2}, \frac{2}{15}$

LCM of 2, 5, 10, 15

| | | | | |
|---|---|---|---|---|
| 2 | 2, | 5, | 10, | 15 |
| 3 | 1, | 5, | 5, | 15 |
| 5 | 1, | 5, | 5, | 5 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 3 \times 5 = 30$

$\frac{3}{10} = \frac{3}{10} \times \frac{3}{3} = \frac{9}{30}$

$\frac{1}{5} = \frac{1}{5} \times \frac{6}{6} = \frac{6}{30}$

$\frac{5}{2} = \frac{5}{2} \times \frac{15}{15} = \frac{75}{30}$

$\frac{2}{15} = \frac{2}{15} \times \frac{2}{2} = \frac{4}{30}$

Clearly, $\frac{4}{30} < \frac{6}{30} < \frac{9}{30} < \frac{75}{30}$

Hence, $\frac{2}{15} < \frac{1}{5} < \frac{3}{10} < \frac{5}{2}$

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(c) $\frac{1}{7}, \frac{8}{28}, \frac{7}{14}, \frac{6}{35}$

LCM of 7, 28, 14, 35

| | | | | |
|---|---|---|---|---|
| 2 | 7, | 28, | 14, | 35 |
| 2 | 7, | 14, | 7, | 35 |
| 5 | 7, | 7, | 7, | 35 |
| 7 | 7, | 7, | 7, | 7 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 5 \times 7 = 140$

$\frac{1}{7} = \frac{1}{7} \times \frac{20}{20} = \frac{20}{140}$

$\frac{8}{28} = \frac{8}{28} \times \frac{5}{5} = \frac{40}{140}$

$\frac{7}{14} = \frac{7}{14} \times \frac{10}{10} = \frac{70}{140}$

$\frac{6}{35} = \frac{6}{35} \times \frac{4}{4} = \frac{24}{140}$

Clearly, $\frac{20}{140} < \frac{24}{140} < \frac{40}{140} < \frac{70}{140}$

Hence, $\frac{1}{7} < \frac{6}{35} < \frac{8}{28} < \frac{7}{14}$

(d) $\frac{6}{4}, \frac{7}{8}, \frac{11}{2}, \frac{2}{6}$

LCM of 2, 4, 6, 8

| | | | | |
|---|---|---|---|---|
| 2 | 2, | 4, | 6, | 8 |
| 2 | 1, | 2, | 3, | 4 |
| 2 | 1, | 1, | 3, | 2 |
| 3 | 1, | 1, | 3, | 1 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 2 \times 3 = 24$

$\frac{6}{4} = \frac{6}{4} \times \frac{6}{6} = \frac{36}{24}$

$\frac{7}{8} = \frac{7}{8} \times \frac{3}{3} = \frac{21}{24}$

$\frac{11}{2} = \frac{11}{2} \times \frac{12}{12} = \frac{132}{24}$

$\frac{2}{6} = \frac{2}{6} \times \frac{4}{4} = \frac{8}{24}$

Clearly, $\frac{8}{24} < \frac{21}{24} < \frac{36}{24} < \frac{132}{24}$

Hence, $\frac{2}{6} < \frac{7}{8} < \frac{6}{4} < \frac{11}{2}$

(e) $\frac{4}{8}, \frac{7}{4}, \frac{17}{24}, \frac{7}{12}$

LCM of 4, 8, 12, 24

| | | | | |
|---|---|---|---|---|
| 2 | 4, | 8, | 12, | 24 |
| 2 | 2, | 4, | 6, | 12 |
| 2 | 1, | 2, | 3, | 6 |
| 3 | 1, | 1, | 3, | 3 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 2 \times 3 = 24$

$\frac{4}{8} = \frac{4}{8} \times \frac{3}{3} = \frac{12}{24}$

(f) $\frac{1}{3}, \frac{5}{8}, \frac{7}{6}, \frac{2}{16}$

LCM of 3, 6, 8, 16

| | | | | |
|---|---|---|---|---|
| 2 | 3, | 6, | 8, | 16 |
| 2 | 3, | 3, | 4, | 8 |
| 2 | 3, | 3, | 2, | 4 |
| 2 | 3, | 3, | 1, | 2 |
| 3 | 3, | 3, | 1, | 1 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 2 \times 2 \times 3 = 48$

$\frac{1}{3} = \frac{1}{3} \times \frac{16}{16} = \frac{16}{48}$

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$\frac{7}{4} = \frac{7}{4} \times \frac{6}{6} = \frac{42}{24}$

$\frac{7}{12} = \frac{7}{12} \times \frac{2}{2} = \frac{14}{24}$

Clearly, $\frac{12}{24} < \frac{14}{24} < \frac{17}{24} < \frac{42}{24}$

Hence, $\frac{4}{8} < \frac{7}{12} < \frac{17}{24} < \frac{7}{4}$

$\frac{5}{8} = \frac{5}{8} \times \frac{6}{6} = \frac{30}{48}$

$\frac{7}{6} = \frac{7}{6} \times \frac{8}{8} = \frac{56}{48}$

$\frac{2}{16} = \frac{2}{16} \times \frac{3}{3} = \frac{6}{48}$

Clearly, $\frac{6}{48} < \frac{16}{48} < \frac{30}{48} < \frac{56}{48}$

$\frac{2}{16} < \frac{1}{3} < \frac{5}{8} < \frac{7}{6}$

**4.** (a) $\frac{7}{12}, \frac{8}{15}, \frac{1}{3}, \frac{4}{9}$

LCM of 3, 9, 12, 15

| | | | | |
|---|---|---|---|---|
| 3 | 3, | 9, | 12, | 15 |
| 3 | 1, | 3, | 4, | 5 |
| 2 | 1, | 1, | 4, | 5 |
| 2 | 1, | 1, | 2, | 5 |
| 5 | 1, | 1, | 1, | 5 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 3 \times 3 \times 5 = 180$

$\frac{7}{12} = \frac{7}{12} \times \frac{15}{15} = \frac{105}{180}$;

$\frac{8}{15} = \frac{8}{15} \times \frac{12}{12} = \frac{96}{180}$;

$\frac{1}{3} = \frac{1}{3} \times \frac{60}{60} = \frac{60}{180}$;

$\frac{4}{9} = \frac{4}{9} \times \frac{20}{20} = \frac{80}{180}$

Clearly, $\frac{105}{180} > \frac{96}{180} > \frac{80}{180} > \frac{60}{180}$ Hence, $\frac{7}{12} > \frac{8}{15} > \frac{4}{9} > \frac{1}{3}$

(b) $\frac{5}{12}, \frac{4}{6}, \frac{3}{5}, \frac{11}{10}$

LCM of 5, 6, 10, 12

| | | | | |
|---|---|---|---|---|
| 2 | 5, | 6, | 10, | 12 |
| 2 | 5, | 3, | 5, | 6 |
| 3 | 5, | 3, | 5, | 3 |
| 5 | 5, | 1, | 5, | 1 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 3 \times 5 = 60$

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Now, $\frac{5}{12} = \frac{5}{12} \times \frac{5}{5} = \frac{25}{60}$; $\frac{4}{6} = \frac{4}{6} \times \frac{10}{10} = \frac{40}{60}$;

$\frac{3}{5} = \frac{3}{5} \times \frac{12}{12} = \frac{36}{60}$; $\frac{11}{10} = \frac{11}{10} \times \frac{6}{6} = \frac{66}{60}$

Clearly, $\frac{66}{60} > \frac{40}{60} > \frac{36}{60} > \frac{25}{60}$ Hence, $\frac{11}{10} > \frac{4}{6} > \frac{3}{5} > \frac{5}{12}$

(c) $\frac{4}{12}, \frac{8}{4}, \frac{13}{2}, \frac{5}{6}$

LCM of 2, 4, 6, 12

| | | | | |
|---|---|---|---|---|
| 2 | 2, | 4, | 6, | 12 |
| 2 | 1, | 2, | 3, | 6 |
| 3 | 1, | 1, | 3, | 3 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 3 = 12$

Now, $\frac{8}{4} = \frac{8}{4} \times \frac{3}{3} = \frac{24}{12}$; $\frac{13}{2} = \frac{13}{2} \times \frac{6}{6} = \frac{78}{12}$;

$\frac{5}{6} = \frac{5}{6} \times \frac{2}{2} = \frac{10}{12}$

Clearly, $\frac{78}{12} > \frac{24}{12} > \frac{10}{12} > \frac{4}{12}$ Hence, $\frac{13}{2} > \frac{8}{4} > \frac{5}{6} > \frac{4}{12}$

(d) $\frac{2}{16}, \frac{5}{12}, \frac{7}{8}, \frac{9}{24}$

LCM of 8, 12, 16, 24

| | | | | |
|---|---|---|---|---|
| 2 | 8, | 12, | 16, | 24 |
| 2 | 4, | 6, | 8, | 12 |
| 2 | 2, | 3, | 4, | 6 |
| 2 | 1, | 3, | 2, | 3 |
| 3 | 1, | 3, | 1, | 3 |
| | 1, | 1, | 1, | 1 |

LCM = $2 \times 2 \times 2 \times 2 \times 3 = 48$

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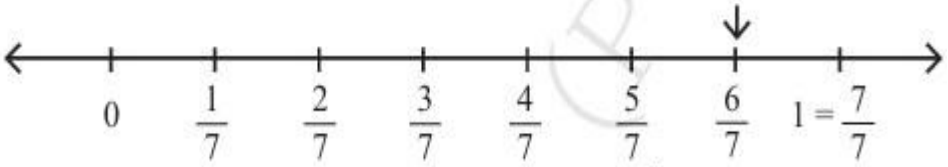
$\frac{2}{16} = \frac{2}{16} \times \frac{3}{3} = \frac{6}{48}$; $\frac{5}{12} = \frac{5}{12} \times \frac{4}{4} = \frac{20}{48}$;

$\frac{7}{8} = \frac{7}{8} \times \frac{6}{6} = \frac{42}{48}$; $\frac{9}{24} = \frac{9}{24} \times \frac{2}{2} = \frac{18}{48}$

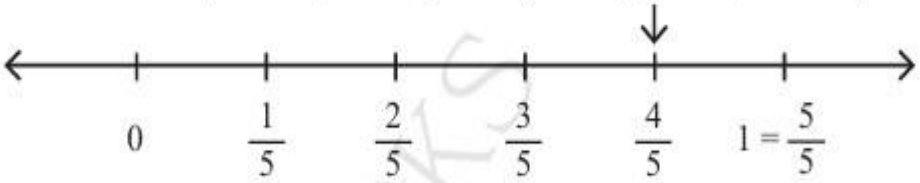
Clearly, $\frac{42}{48} > \frac{20}{48} > \frac{18}{48} > \frac{6}{48}$ Hence, $\frac{7}{8} > \frac{5}{12} > \frac{9}{24} > \frac{2}{16}$

## Exercise 5D

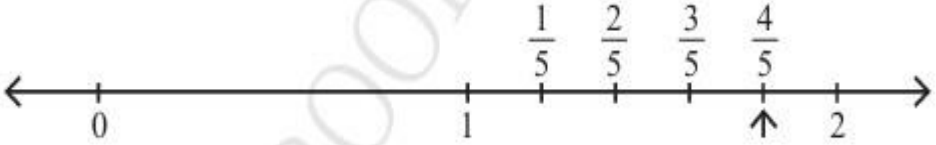
**1.** (i)



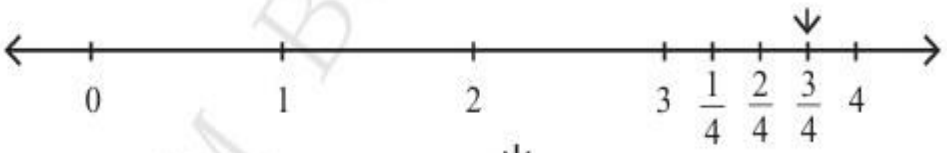

(ii)



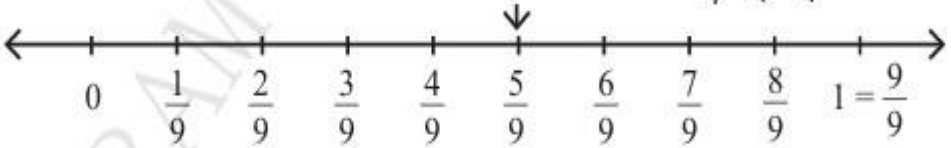

(iii)



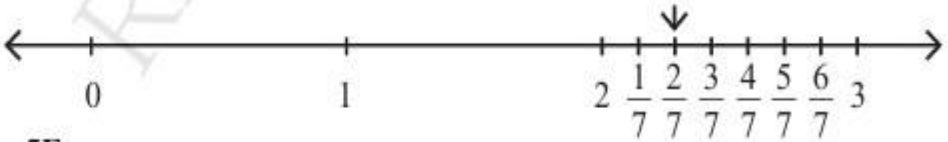

(iv)




(v)




(vi)




## Exercise 5E

**1.** (a) $\frac{1}{2} + \frac{1}{3} = \frac{3+2}{6} = \frac{5}{6}$ (b) $\frac{16}{17} + \frac{2}{17} = \frac{16+2}{17} = \frac{18}{17}$

(c) $1\frac{2}{3} + 3\frac{2}{15} = \frac{5}{3} + \frac{47}{15} = \frac{25+47}{15} = \frac{72}{15} = \frac{24}{5} = 4\frac{4}{5}$

(d) $6\frac{5}{9} + 4\frac{1}{3} + 2\frac{1}{6} = \frac{59}{9} + \frac{13}{3} + \frac{13}{6} = \frac{118+78+39}{18} = \frac{235}{18} = 13\frac{1}{18}$

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(e) $5+3\frac{6}{7}=\frac{5}{1}+\frac{27}{7}=\frac{35+27}{7}=\frac{62}{7}=8\frac{6}{7}$

(f) $5\frac{1}{8}+3\frac{1}{12}+4=\frac{41}{8}+\frac{37}{12}+\frac{4}{1}=\frac{123+74+96}{24}=\frac{293}{24}=12\frac{5}{24}$

**2.** (a) $7\frac{2}{3}-5\frac{1}{6}=\frac{23}{3}-\frac{31}{6}=\frac{46-31}{6}=\frac{15}{6}=\frac{5}{2}=2\frac{1}{2}$

(b) $6\frac{2}{3}-4\frac{1}{9}=\frac{20}{3}-\frac{37}{9}=\frac{60-37}{9}=\frac{23}{9}=2\frac{5}{9}$

(c) $3-2\frac{1}{8}=\frac{3}{1}-\frac{17}{8}=\frac{24-17}{8}=\frac{7}{8}$

(d) $1\frac{11}{24}-\frac{7}{8}=\frac{35}{24}-\frac{7}{8}=\frac{35-21}{24}=\frac{14}{24}=\frac{7}{12}$

(e) $5\frac{2}{3}-2\frac{3}{4}=\frac{17}{3}-\frac{11}{4}=\frac{68-33}{12}=\frac{35}{12}=2\frac{11}{12}$

(f) $6\frac{3}{10}-3\frac{7}{15}=\frac{63}{10}-\frac{52}{15}=\frac{189-104}{30}=\frac{85}{30}=\frac{17}{6}=2\frac{5}{6}$

**3.** (a) $\frac{5}{18}+\frac{1}{6}+\frac{5}{12}=\frac{10+6+15}{36}=\frac{31}{36}$

(b) $3\frac{3}{7}+2\frac{1}{6}=\frac{24}{7}+\frac{13}{6}=\frac{144+91}{42}=\frac{235}{42}=5\frac{25}{42}$

(c) $\frac{4}{1}+\frac{1}{4}+\frac{5}{6}=\frac{96+6+20}{24}=\frac{122}{24}=\frac{61}{12}=5\frac{1}{12}$

(d) $\frac{7}{18}-\frac{4}{15}=\frac{35-24}{90}=\frac{11}{90}$

(e) $6-\frac{21}{5}=\frac{30-21}{5}=\frac{9}{5}$

(f) $\frac{4}{3}-\frac{7}{12}=\frac{16-7}{12}=\frac{9}{12}=\frac{3}{4}$

**4.** (a) $3\frac{5}{24}+2\frac{1}{16}-1\frac{3}{12}$

$=\frac{77}{24}+\frac{33}{16}-\frac{15}{12}=\frac{154+99-60}{48}=\frac{253-60}{48}=\frac{193}{48}=4\frac{1}{48}$

(b) $7+12\frac{1}{3}-8\frac{3}{7}=\frac{7}{1}+\frac{37}{3}-\frac{59}{7}=\frac{147+259-177}{21}=\frac{229}{21}=10\frac{19}{21}$

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(c) $3\frac{5}{4} - 1\frac{11}{12} + 2\frac{1}{3} = \frac{17}{4} - \frac{23}{12} + \frac{7}{3} = \frac{51-23+28}{12} = \frac{\cancel{56}^{14}}{\cancel{12}_{3}} = \frac{14}{3} = 4\frac{2}{3}$

(d) $\frac{7}{10} + 8\frac{2}{5} - 1\frac{1}{2} = \frac{7}{10} + \frac{42}{5} - \frac{3}{2}$

$= \frac{7+84-15}{10} = \frac{91-15}{10} = \frac{76}{10} = \frac{38}{5} = 7\frac{3}{5}$

**Exercise 5F**

**1.** Paint used for chair = $1\frac{2}{7} = \frac{9}{7}$

Paint used for table = $2\frac{4}{7} = \frac{18}{7}$

Total paint used = $\frac{9}{7} + \frac{18}{7} = \frac{9+18}{7} = \frac{27}{7} = 3\frac{6}{7}$

**2.** Meeta ate $\frac{5}{12}$ of cake

Vikas ate $\frac{5}{12}$ of cake

Total cake eaten = $\frac{5}{12} + \frac{5}{12} = \frac{10}{12} = \frac{5}{6}$

Cake left = $1 - \frac{5}{6} = \frac{1}{6}$

**3.** A drum full of wheat weighs = $50\frac{1}{6}$ kg = $\frac{301}{6}$ kg

Empty drum weighs = $11\frac{3}{4}$ kg = $\frac{47}{4}$ kg

Thus, weight of wheat = $\frac{301}{6} - \frac{47}{4} = \frac{602-141}{12} = \frac{461}{12}$ kg = $38\frac{5}{12}$ kg

**4.** Rahul bought rice = $7\frac{1}{2}$ kg = $\frac{15}{2}$ kg

Reena bought rice = $\frac{15}{4}$ kg

(a) They buy together = $\frac{15}{2}$ kg + $\frac{15}{4}$ kg = $\frac{30+15}{4} = \frac{45}{4}$ kg = $11\frac{1}{4}$ kg

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(b) Rahul bought more rice by $= \frac{15}{2} - \frac{15}{4} = \frac{30-15}{4} = \frac{15}{4}\text{ kg} = 3\frac{3}{4}\text{ kg}$

**5.** (a) Total cloth bought by family $= \left(4\frac{2}{5}+3\frac{1}{3}+2\frac{1}{10}\right)\text{m}$

$= \left(\frac{22}{5}+\frac{10}{3}+\frac{21}{10}\right)\text{m} = \left(\frac{132+100+63}{30}\right)\text{m} = \frac{295}{30}\text{m} = \frac{59}{6}\text{m} = 9\frac{5}{6}\text{m}$

(b) Cloth left in roll $= \left(30-\frac{59}{6}\right)\text{m} = \frac{180-59}{6}\text{m} = \frac{121}{6}\text{m} = 20\frac{1}{6}\text{m}$

**6.** Distance covered by car $= 29\frac{1}{3}\text{ km} = \frac{88}{3}\text{ km}$

Distance covered by autorickshaw $= 21\frac{5}{6}\text{ km} = \frac{131}{6}\text{ km}$

Total distance travelled $= 57\frac{1}{2}\text{ km} = \frac{115}{2}\text{ km}$

Thus, distance travelled on foot $= \frac{115}{2} - \left(\frac{88}{3}+\frac{131}{6}\right)$

$= \frac{115}{2} - \frac{307}{6} = \frac{345-307}{6} = \frac{38}{6} = \frac{19}{3}\text{ km} = 6\frac{1}{3}\text{ km}$

**7.** $8\frac{4}{5} - 3\frac{7}{10} = \frac{44}{5} - \frac{37}{10} = \frac{88-37}{10} = \frac{51}{10} = 5\frac{1}{10}$

So, the required number $= 5\frac{1}{10}$.

**8.** $11\frac{1}{9} - 7\frac{1}{6} = \frac{100}{9} - \frac{43}{6} = \frac{200-129}{18} = \frac{71}{18} = 3\frac{17}{18}$

So, the required number $= 3\frac{17}{18}$.

**9.** Difference $= 3\frac{1}{6} - 1\frac{3}{4} = \frac{19}{6} - \frac{7}{4} = \frac{38-21}{12} = \frac{17}{12} = 1\frac{5}{12}$

Sum $= 1\frac{3}{12} + 1\frac{1}{3} = \frac{15}{12} + \frac{4}{3} = \frac{15+16}{12} = \frac{31}{12} = 2\frac{7}{12}$

$2\frac{7}{12} > 1\frac{5}{12}$

Thus, sum of $1\frac{3}{12}$ and $1\frac{1}{3}$ is greater.

**10.** Total thread in the reel = $20\frac{3}{4}$ m = $\frac{83}{4}$ m

Thread used = $8\frac{1}{2}$ m = $\frac{17}{2}$ m

Thread left in the reel = $\frac{83}{4} - \frac{17}{2} = \frac{83-34}{4} = \frac{49}{4}$ m = $12\frac{1}{4}$ m

Later thread used = $7\frac{3}{8}$ m = $\frac{59}{8}$ m

Now remaining thread in reel = $\frac{49}{4} - \frac{59}{8} = \frac{98-59}{8} = \frac{39}{8}$ m = $4\frac{7}{8}$ m

**11.** $7\frac{3}{4} + 6\frac{1}{2} = \frac{31}{4} + \frac{13}{2} = \frac{31+26}{4} = \frac{57}{4}$

Now, $5\frac{1}{2} + 3\frac{3}{8} = \frac{11}{2} + \frac{27}{8} = \frac{44+27}{8} = \frac{71}{8}$

Now, subtract $\Rightarrow \frac{57}{4} - \frac{71}{8} = \frac{114-71}{8} = \frac{43}{8} = 5\frac{3}{8}$

**12.** Difference of 5 and $3\frac{1}{2}$.

$5 - 3\frac{1}{2} = \frac{5}{1} - \frac{7}{2} = \frac{10-7}{2} = \frac{3}{2}$

Now, difference of $8\frac{2}{3}$ and $5\frac{1}{6}$.

$= 8\frac{2}{3} - 5\frac{1}{6} = \frac{26}{3} - \frac{31}{6} = \frac{52-31}{6} = \frac{21}{6} = \frac{7}{2}$

Now, subtract the difference $\Rightarrow \frac{7}{2} - \frac{3}{2} = \frac{4}{2} = 2$

**Review Time**

**I.** **1.** (c) **2.** (c) **3.** (a) **4.** (a) **5.** (b)

**II.** **1.** (a) $\frac{2}{3} \boxed{<} \frac{5}{6}$ (b) $\frac{5}{14} \boxed{<} \frac{4}{7}$

(c) $\frac{8}{9} \boxed{<} \frac{25}{27}$ (d) $\frac{8}{9} \boxed{>} \frac{2}{3}$

**2.** (a) $\frac{7 \times 12}{4} = 21$ (b) $\frac{7 \times 72}{8} = 63$

(c) $\frac{19}{3} + \frac{22}{3} = \frac{41}{3}$ (d) $\frac{3}{5} + \frac{3}{5} = \frac{6}{5}$

**III.** **1.** (iii) **2.** (i) **3.** (i)

**IV.** **1.** (a) **2.** (a)

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