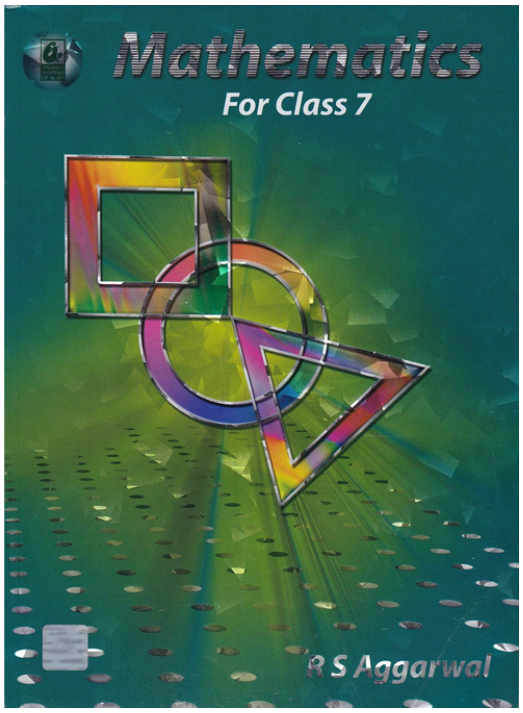
RS Aggarwal Solutions for Class 7 Maths Chapter 2–Fractions

Class 7 - Chapter 2 Fractions



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RS Aggarwal Solutions for Class 7 Maths Chapter 2–Fractions

Class 7: Maths Chapter 1 solutions. Complete Class 7 Maths Chapter 1 Notes.

RS Aggarwal Solutions for Class 8 Maths Chapter 2–Fractions

RS Aggarwal 7th Maths Chapter 1, Class 7 Maths Chapter 1 solutions

Ex 2A

Question 1.

Solution:

$(i)\ \frac{5}{8}$ and $\frac{7}{12}$

$\Rightarrow \quad 5 \times 12 = 60$

$7 \times 8 = 56$

$\because \quad 60 > 56$

$\therefore \quad \frac{5}{8} > \frac{7}{12}$

$(ii) \quad \frac{5}{9}$ and $\frac{11}{15}$

$\Rightarrow \quad 5 \times 15 = 75$

$11 \times 9 = 99$

$\because \quad 75 < 99$

$\therefore \quad \frac{5}{9} < \frac{11}{15}$

$(iii) \quad \frac{11}{12}$ and $\frac{15}{16}$

$\Rightarrow \quad 11 \times 16 = 176$

$15 \times 12 = 180$

$\because \quad 176 < 180$

$\therefore \quad \frac{11}{12} < \frac{15}{16}$

Question 2.

Solution:

$$\frac{3}{4}, \frac{5}{6}, \frac{7}{9}, \frac{11}{12}$$

Writing them into like fractions, LCM of 4, 6, 9 and 12 = 36

$$\therefore \quad \frac{3}{4} = \frac{3\times 9}{4\times 9} = \frac{27}{36}$$

$$\frac{5}{6} = \frac{5\times 6}{6\times 6} = \frac{30}{36}$$

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

$$\frac{11}{12} = \frac{11\times 3}{12\times 3} = \frac{33}{36}$$

Now, arranging them in ascending order,

$$\frac{27}{36} < \frac{28}{36} < \frac{30}{36} < \frac{33}{36}$$

or $$\frac{3}{4} < \frac{7}{9} < \frac{5}{6} < \frac{11}{12}$$

(*ii*) $\frac{4}{5}, \frac{7}{10}, \frac{11}{15}, \frac{17}{20}$ Writing them into like fractions

LCM of 5, 10, 15, 20 = 60

Now $\frac{4}{5} = \frac{4\times12}{5\times12} = \frac{48}{60}$

$\frac{7}{10} = \frac{7\times6}{10\times6} = \frac{42}{60}$

$\frac{11}{15} = \frac{11\times4}{15\times4} = \frac{44}{60}$

$\frac{17}{20} = \frac{17\times3}{20\times3} = \frac{51}{60}$

Now arranging them in ascending order

$$\frac{42}{60} < \frac{44}{60} < \frac{48}{60} < \frac{51}{60}$$

or $$\frac{7}{10} < \frac{11}{15} < \frac{4}{5} < \frac{17}{20}$$

Question 3.

Solution:

(*i*) $\frac{3}{4}, \frac{7}{8}, \frac{7}{12}, \frac{17}{24}$

Writing them into like fractions

LCM of 4, 8, 12, and 24

$\therefore \quad \frac{3}{4} = \frac{3\times6}{4\times6} = \frac{18}{24}$

$\frac{7}{8} = \frac{7\times3}{8\times3} = \frac{21}{24}$

$\frac{7}{12} = \frac{7\times2}{12\times2} = \frac{14}{24}$

$\frac{17}{24} = \frac{17}{24}$

Now, arranging them in descending order

$\frac{21}{24} > \frac{18}{24} > \frac{17}{24} > \frac{14}{24}$

or $\frac{7}{8} > \frac{3}{4} > \frac{17}{24} > \frac{7}{12}$

(ii) $\frac{2}{3}, \frac{3}{5}, \frac{7}{10}, \frac{8}{15}$

Writing them into like fractions

LCM of 3, 5, 10, 15 = 30

$\therefore \quad \frac{2}{3} = \frac{2\times10}{3\times10} = \frac{20}{30}$

$\frac{3}{5} = \frac{3\times6}{5\times6} = \frac{18}{30}$

$\frac{7}{10} = \frac{7\times3}{10\times3} = \frac{21}{30}$

$\frac{8}{15} = \frac{8\times2}{15\times2} = \frac{16}{30}$

$\frac{21}{30} > \frac{20}{30} > \frac{18}{30} > \frac{16}{30}$

or $\frac{7}{10} > \frac{2}{3} > \frac{3}{5} > \frac{8}{15}$

Question 4.

Solution:

Reenu get 27 of an apple while Sonal gets 45 part of it

Now $\frac{2}{7}, \frac{4}{5}$

$\Rightarrow 2 \times 5, 4 \times 7$

$\Rightarrow 10, 28$

$\therefore$ 28 is greater

$\therefore \frac{4}{5}$ part is greater

$$\text{Difference} = \frac{4}{5} - \frac{2}{7}$$

$$= \frac{4\times7-2\times5}{35}$$

$$= \frac{28-10}{35} = \frac{18}{35}$$

$\therefore$ Sonal gets greater part and by $\frac{18}{35}$ part

Question 5.

Solution:

(*i*) $\frac{5}{9}+\frac{3}{9}=\frac{5+3}{9}=\frac{8}{9}$

(*ii*) $\frac{8}{9}+\frac{7}{12}$

LCM of 9 and 12 = 36

$\therefore \quad \frac{8}{9}=\frac{8\times4}{9\times4}=\frac{32}{36}$

$\frac{7}{12}=\frac{7\times3}{12\times3}=\frac{21}{36}$

$\therefore \quad \frac{8}{9}+\frac{7}{12}=\frac{32}{36}+\frac{21}{36}$

$=\frac{32+21}{36}=\frac{53}{36}=1\frac{17}{36}$

(*iii*) $\frac{5}{6}+\frac{7}{8}$

LCM of 6, 8 = 24

$\therefore \quad \frac{5}{6}=\frac{5\times4}{6\times4}=\frac{20}{24}$

$\frac{7}{8}=\frac{7\times3}{8\times3}=\frac{21}{24}$

$\therefore \quad \frac{5}{6}+\frac{7}{8}=\frac{20}{24}+\frac{21}{24}$

$=\frac{20+21}{24}=\frac{41}{24}$

$=1\frac{17}{24}$

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(*iv*) $\frac{7}{12}+\frac{11}{16}+\frac{9}{24}$

LCM of 12, 16, 24 = 48

$\frac{7}{12}=\frac{7\times4}{12\times4}=\frac{28}{48}$

$\frac{11}{16}=\frac{11\times3}{16\times3}=\frac{33}{48}$

$\frac{9}{24}=\frac{9\times2}{24\times2}=\frac{18}{48}$

$\therefore \quad \frac{7}{12}+\frac{11}{16}+\frac{9}{24}=\frac{28}{48}+\frac{33}{48}+\frac{18}{48}$

$=\frac{28+33+18}{48}$

$=\frac{79}{48}=1\frac{31}{48}$

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(v) $3\frac{4}{5}+2\frac{3}{10}+1\frac{1}{15}$

$$=\frac{19}{5}+\frac{23}{10}+\frac{16}{15}$$

LCM of 5, 10, 15 = 30

$$\therefore \quad \frac{19}{5}=\frac{19\times6}{5\times6}=\frac{114}{30}$$

$$\frac{23}{10}=\frac{23\times3}{10\times3}=\frac{69}{30}$$

$$\frac{16}{15}=\frac{16\times2}{15\times2}=\frac{32}{30}$$

$$\therefore \frac{19}{5}+\frac{23}{10}+\frac{16}{15}=\frac{114}{30}+\frac{69}{30}+\frac{32}{30}$$

$$=\frac{114+69+32}{30}=\frac{215}{30}$$

$$= \frac{215 \div 5}{30 \div 5} = \frac{43}{6} = 7\frac{1}{6}$$

(vi) $8\frac{3}{4} + 10\frac{2}{5}$

$$= \frac{35}{4} + \frac{52}{5}$$

LCM of 4 and 5 = 20

$$\therefore \quad \frac{35}{4} = \frac{35 \times 5}{4 \times 5} = \frac{175}{20}$$

$$\frac{52}{5} = \frac{52 \times 4}{5 \times 4} = \frac{208}{20}$$

$$\therefore \quad \frac{35}{4} + \frac{52}{5} = \frac{175}{20} + \frac{208}{20}$$

$$= \frac{175 + 208}{20} = \frac{383}{20} = 19\frac{3}{20}$$

Question 6.

Solution:

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(i) $\frac{5}{7}-\frac{2}{7}=\frac{5-2}{7}=\frac{3}{7}$

(ii) $\frac{5}{6}-\frac{3}{4}$

LCM of 6 and 4 = 12

$\therefore \quad \frac{5}{6}=\frac{5\times2}{6\times2}=\frac{10}{12}$

$\frac{3}{4}=\frac{3\times3}{4\times3}=\frac{9}{12}$

(iv) $7-4\frac{2}{3}=\frac{7}{1}-\frac{14}{3}$

LCM of 1 and 3 = 3

$\therefore \quad \frac{7\times3}{1\times3}=\frac{21}{3}$

$\frac{7}{1}-\frac{14}{3}=\frac{21}{3}-\frac{14}{3}=\frac{21-14}{3}$

$=\frac{7}{3}=2\frac{1}{3}$

(v) $3\frac{3}{10}-1\frac{7}{15}=\frac{33}{10}-\frac{22}{15}$

LCM of 10, 15 = 30

$\therefore \quad \frac{33}{10}=\frac{33\times3}{10\times3}=\frac{99}{30}$

$\frac{22}{15}=\frac{22\times2}{15\times2}=\frac{44}{30}$

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$$\therefore \quad \frac{33}{10}-\frac{22}{15}=\frac{99}{30}-\frac{44}{30}$$

$$=\frac{99-44}{30}=\frac{55}{30}$$

$$=\frac{55\div 5}{30\div 5}=\frac{11}{6}$$

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

$$(vi) \quad 2\frac{5}{9}-1\frac{7}{15}=\frac{23}{9}-\frac{22}{15}$$

LCM of 9 and 15 = 45

$$\therefore \quad \frac{23}{9}=\frac{23\times 5}{9\times 5}=\frac{115}{45}$$

$$\frac{22}{15}=\frac{22\times 3}{15\times 3}=\frac{66}{45}$$

$$\therefore \quad \frac{23}{9}-\frac{22}{15}=\frac{115}{45}-\frac{66}{45}$$

$$=\frac{115-66}{45}=\frac{49}{45}$$

Question 7.

Solution:

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$$\frac{5}{6}=\frac{5\times3}{6\times3}=\frac{15}{18}$$

$$\frac{1}{9}=\frac{1\times2}{9\times2}=\frac{2}{18}$$

$$\therefore \quad \frac{2}{3}+\frac{5}{6}-\frac{1}{9}=\frac{12}{18}+\frac{15}{18}-\frac{2}{18}$$

$$=\frac{12+15-2}{18}=\frac{27-2}{18}$$

$$=\frac{25}{18}=1\frac{7}{18}$$

(*ii*) $8-4\frac{1}{2}-2\frac{1}{4}=\frac{8}{1}-\frac{9}{2}-\frac{9}{4}$

(*i*) $\frac{2}{3}+\frac{5}{6}-\frac{1}{9}$

LCM of 1, 2, 4, = 4

LCM of 3, 6, 9 = 18

$$\therefore \quad \frac{8}{1}=\frac{8\times4}{1\times4}=\frac{32}{4}$$

$$\therefore \quad \frac{2}{3}=\frac{2\times6}{3\times6}=\frac{12}{18}$$

$$\frac{9}{2}=\frac{9\times2}{2\times2}=\frac{18}{4}$$

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

$$\therefore \quad \frac{8}{1}-\frac{9}{2}-\frac{9}{4}=\frac{32}{4}-\frac{18}{4}-\frac{9}{4}$$

$$=\frac{32-18-9}{4}=\frac{32-27}{4}$$

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

(iii) $8\frac{5}{6}-3\frac{3}{8}+1\frac{7}{12}=\frac{53}{6}-\frac{27}{8}+\frac{19}{12}$

LCM of 6, 8, 12 = 24

$$\therefore \quad \frac{53}{6}=\frac{53\times4}{6\times4}=\frac{212}{24}$$

$$\frac{27}{8}=\frac{27\times3}{8\times3}=\frac{81}{24}$$

$$\frac{19}{12}=\frac{19\times2}{12\times2}=\frac{38}{24}$$

$$\therefore \quad \frac{53}{6}-\frac{27}{8}+\frac{19}{12}$$

$$=\frac{212}{24}-\frac{81}{24}+\frac{38}{24}$$

$$=\frac{212-81+38}{24}=\frac{250-81}{24}$$

$$=\frac{169}{24}=7\frac{1}{24}$$

Question 8.

Solution:

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Aneeta bought apples $= 3\frac{3}{4}$ kg $= \frac{15}{4}$ kg

and gauva $= 4\frac{1}{2}$ kg $= \frac{9}{2}$ kg

$\therefore$ Total weight of fruits $= \frac{15}{4} + \frac{9}{2}$

$= \frac{15+18}{4} = \frac{33}{4}$ kg

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

Question 9.

Solution:

Length of rectangular sheet $(l) = 15\frac{3}{4}$ cm

$= \frac{63}{4}$ cm

and width $(b) = 12\frac{1}{2}$ cm $= \frac{25}{2}$ cm

$\therefore$ Its perimeter $= 2(l + b)$

$= 2\left[\frac{63}{4} + \frac{25}{2}\right]$

$= 2\left[\frac{63 + 50}{4}\right]$

$= 2 \times \frac{113}{4} = \frac{113}{2}$ cm

$= 56\frac{1}{2}$ cm

Question 10.

Solution:

Width of picture $= 7\frac{3}{5} = \frac{38}{5}$ cm

and width of frame $= 7\frac{3}{10}$ cm $= \frac{73}{10}$ cm

$\therefore$ Width trimmed to fit in the frame

$= \frac{38}{5} - \frac{73}{10}$

$= \frac{76-73}{10} = \frac{3}{10}$ cm

Question 11.

Solution:

For finding the required fraction, we have to subtract 735 from 18

$\therefore$ Required number $= 18 - 7\frac{3}{5} = \frac{18}{1} - \frac{38}{5}$

$= \frac{90}{5} - \frac{38}{5} = \frac{90-38}{5} = \frac{52}{5} = 10\frac{2}{5}$

$\therefore$ $10\frac{2}{5}$ should be added Ans.

Question 12.

Solution:

For finding the required fraction we should subtract 7415 from 825

$\therefore$ Required number $= 8\frac{2}{5} - 7\frac{4}{15}$

$= \frac{42}{5} - \frac{109}{15}$

$= \frac{126-109}{15}$ (LCM of $5, 15 = 15$)

$= \frac{17}{15} = 1\frac{2}{15}$

Question 13.

Solution:

Total length of wire $= 3\frac{3}{4}$ m

$= \frac{15}{4}$ m

One piece $= 1\frac{1}{2}$ m $= \frac{3}{2}$ m.

$\therefore$ Other piece $= \frac{15}{4} - \frac{3}{2}$

$= \frac{15-6}{4}$ (LCM of $4, 2 = 4$)

$= \frac{9}{4} = 2\frac{1}{4}$ m

Question 14.

Solution:

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$$\text{Total duration of the film} = 3\frac{2}{3}$$

$$= \frac{11}{3} \text{ hours.}$$

$$\text{Time spent on advertisement} = 1\frac{1}{2}$$

$$= \frac{3}{2} \text{ hours}$$

$$\therefore \text{ Actual duration of the film} = \frac{11}{3} - \frac{3}{2}$$

$$= \frac{22-9}{6} \quad (\text{LCM of } 3, 2 = 6)$$

$$= \frac{13}{6} = 2\frac{1}{6} \text{ hours.}$$

Question 15.

Solution:

$\frac{2}{3}$ and $\frac{5}{9}$

LCM of 3 and 9 = 9

$\frac{2}{3} = \frac{2\times3}{3\times3} = \frac{6}{9}$

$\therefore$ $\frac{6}{9}$ is greater than $\frac{5}{9}$

or $\frac{2}{3}$ is greater than $\frac{5}{9}$

and $\frac{6}{9} - \frac{5}{9} = \frac{1}{9}$

$\therefore$ $\frac{2}{3}$ is greater than $\frac{5}{9}$ by $\frac{1}{9}$

Question 16.

Solution:

$$\text{Cost of a pen} = \text{Rs } 16\frac{3}{5} = \text{Rs } \frac{83}{5}$$

$$\text{Cost of a pencil} = \text{Rs } 4\frac{3}{4} = \text{Rs } \frac{19}{4}$$

Now, LCM of 5 and 4 = 20

$$\therefore \quad \frac{83}{5} = \frac{83\times4}{5\times4} = \frac{332}{20}$$

$$\frac{19}{4} = \frac{19\times5}{4\times5} = \frac{95}{20}$$

It is clear that cost of pen is more than that of a pencil

$$\therefore \quad \frac{332}{20} - \frac{95}{20} = \frac{237}{20} = \text{Rs } 11\frac{17}{20}$$

$\therefore$ The cost of pen is more than pencils by

Rs. $11\frac{17}{20}$

Ex 2B

Question 1.

Solution:

$$(i)\ \frac{3}{5}\times\frac{7}{11}=\frac{3\times7}{5\times11}=\frac{21}{55}$$

$$(ii)\ \frac{5}{8}\times\frac{4}{7}=\frac{5\times4}{8\times7}=\frac{5}{2\times7}=\frac{5}{14}$$

$$(iii)\ \frac{4}{9}\times\frac{15}{16}=\frac{4\times15}{9\times16}=\frac{5}{3\times4}=\frac{5}{12}$$

$$(iv)\ \frac{2}{5}\times15=\frac{2\times15}{5}=2\times3=6$$

$$(v)\ \frac{8}{15}\times20=\frac{8\times20}{15}=\frac{8\times4}{3}=\frac{32}{3}=10\frac{2}{3}$$

$$(vi)\ \frac{5}{8}\times1000=\frac{5\times1000}{8}=\frac{5\times125}{1}=625$$

$$(vii)\ 3\frac{1}{8}\times16=\frac{25}{8}\times16=\frac{25\times16}{8}=\frac{25\times2}{1}$$
$$=50$$

$$(viii)\ 2\frac{4}{15}\times12=\frac{34}{15}\times12=\frac{34\times12}{15}$$
$$=\frac{34\times4}{5}=\frac{136}{5}=27\frac{1}{5}$$

$$(ix)\ 3\frac{6}{7}\times4\frac{2}{3}=\frac{27}{7}\times\frac{14}{3}=\frac{27\times14}{7\times3}$$
$$=\frac{9\times2}{1}=18$$

$$(x)\ 9\frac{1}{2}\times 1\frac{9}{19} = \frac{19}{2}\times\frac{28}{19} = \frac{19\times 28}{2\times 19}$$

$$= \frac{1\times 14}{1\times 1} = 14$$

$$(xi)\ 4\frac{1}{8}\times 2\frac{10}{11} = \frac{33}{8}\times\frac{32}{11}$$

$$= \frac{33\times 32}{8\times 11} = \frac{3\times 4}{1\times 1} = \frac{12}{1} = 12$$

$$(xii)\ 5\frac{5}{6}\times 1\frac{5}{7} = \frac{35}{6}\times\frac{12}{7}$$

$$= \frac{35\times 12}{6\times 7} = \frac{5\times 2}{1\times 1} = \frac{10}{1} = 10$$

Question 2.

Solution:

$$(i)\ \frac{2}{3}\times\frac{5}{44}\times\frac{33}{35}=\frac{2\times5\times33}{3\times44\times35}$$

$$=\frac{10\times33}{3\times44\times35}$$

$$=\frac{2\times11}{44\times7}=\frac{1}{2\times7}=\frac{1}{14}$$

$$(ii)\ \frac{12}{25}\times\frac{15}{28}\times\frac{35}{36}=\frac{12\times15\times35}{25\times28\times36}$$

$$=\frac{1\times3\times7}{1\times28\times3}=\frac{1}{4}$$

$$(iii)\ \frac{10}{27}\times\frac{28}{65}\times\frac{39}{56}=\frac{10\times28\times39}{27\times65\times56}$$

$$=\frac{2\times1\times3}{27\times1\times2}=\frac{1}{9}$$

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$$(iv)\ 1\frac{4}{7}\times 1\frac{13}{22}\times 1\frac{1}{15}=\frac{11}{7}\times\frac{35}{22}\times\frac{16}{15}$$

$$=\frac{11\times 35\times 16}{7\times 22\times 15}=\frac{1\times 5\times 16}{1\times 2\times 15}$$

$$=\frac{8}{3}=2\frac{2}{3}$$

$$(v)\ 2\frac{2}{17}\times 7\frac{2}{9}\times 1\frac{33}{52}=\frac{36}{17}\times\frac{65}{9}\times\frac{85}{52}$$

$$=\frac{36\times 65\times 85}{17\times 9\times 52}=5\times 5=25$$

$$(vi)\ 3\frac{1}{16}\times 7\frac{3}{7}\times 1\frac{25}{39}=\frac{49}{16}\times\frac{52}{7}\times\frac{64}{39}$$

$$=\frac{49\times 52\times 64}{16\times 7\times 39}=\frac{7\times 4\times 4}{1\times 1\times 3}\qquad =\frac{112}{3}=37\frac{1}{3}$$

Question 3.

Solution:

$$(i)\ \frac{1}{3}\ \text{of}\ 24 = \frac{1}{3}\times 24 = 8$$

$$(ii)\ \frac{3}{4}\ \text{of}\ 32 = \frac{3}{4}\times 32 = 3 \times 8 = 24$$

$$(iii)\ \frac{5}{9}\ \text{of}\ 45 = \frac{5}{9}\times 45 = 5 \times 5 = 25$$

$$(iv)\ \frac{7}{50}\ \text{of}\ 1000 = \frac{7}{50}\times 1000$$
$$= 7 \times 20 = 140$$

$$(v)\ \frac{3}{20}\ \text{of}\ 1020 = \frac{3}{20}\times 1020$$
$$= 3 \times 51 = 153$$

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(*vi*) $\frac{5}{11}$ of Rs 220 = Rs $\left(\frac{5}{11} \times 220\right)$

= Rs 5 × 20 = Rs 100

(*vii*) $\frac{4}{9}$ of 54 metres = $\left(\frac{4}{9} \times 54\right)$ metres

= 4 × 6 = 24 metres

(*viii*) $\frac{6}{7}$ of 35 litres = $\left(\frac{6}{7} \times 35\right)$ litres

= (6 × 5) litres = 30 litres

(*ix*) $\frac{1}{6}$ of an hour = $\frac{1}{6} \times 60$ minutes

(1 hour = 60 minutes)

= 10 minutes

(*x*) $\frac{5}{6}$ of an year = $\left(\frac{5}{6} \times 12\right)$

(1 year = 12 months)

= (5 × 2) months = 10 months

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(xi) $\frac{7}{20}$ of a kg $= \frac{7}{20} \times 1000$ grams

(1kg = 1000 grams)

$= (7 \times 50)$ grams

$= 350$ grams.

(xii) $\frac{9}{20}$ of a metre $= \frac{9}{20} \times 100$ cm

(1 metre = 100 cm)

$= (9 \times 5)$ cm

$= 45$ cm

(xiii) $\frac{7}{8}$ of a day $= \frac{7}{8} \times 24$ hours

(1 day = 24 hours)

$= (7 \times 3)$ hours $= 21$ hours

(xiv) $\frac{3}{7}$ of a week $= \frac{3}{7} \times 7$ days

(1 week = 7 days)

$= 3$ days

(xv) $\frac{7}{50}$ of a litre $= \frac{7}{50} \times 1000\, ml$

$(1l = 1000\, ml)$

$= (7 \times 20)\, ml = 140\, ml$

Question 4.

Solution:

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Solution : Price of 1 kg of apples $= \text{Rs } 48\frac{4}{5}$

$$= \text{Rs } \frac{244}{5}$$

$$\therefore \text{ Price of } 3\frac{3}{4} \text{ kg of apples} = \text{Rs } \frac{244}{5} \times 3\frac{3}{4}$$

$$= \text{Rs } \left(\frac{244}{5} \times \frac{15}{4}\right)$$

$$= \text{Rs } (61 \times 3) = \text{Rs } 183$$

Question 5.

Solution:

Cost of 1 metre pf cloth

$$= \text{Rs } 42\frac{1}{2} = \text{Rs } \frac{85}{2}$$

$$\text{Cost of } 5\frac{3}{5} \text{ metres} = \text{Rs } \frac{85}{2} \times 5\frac{3}{5}$$

$$= \text{Rs } \left(\frac{85}{2} \times \frac{28}{5}\right)$$

$$= \text{Rs } (17 \times 14) = \text{Rs } 238$$

Question 6.

Solution:

Distance covered in 1 hour

Question 7.

Solution:

Question 8.

Solution:

$$\text{One ticket costs} = \text{Rs } 35\frac{1}{2}$$

$$= \text{Rs } \frac{71}{2}$$

$$\therefore \text{ 308 tickets will cost} = \text{Rs } \frac{71}{2} \times 308$$

$$= \text{Rs } (71 \times 154)$$

$$= \text{Rs } 10934$$

Question 9.

Solution:

Question 10.

Solution:

$$\text{Time taken in one round} = 4\frac{4}{5} \text{ minutes}$$

$$= \frac{24}{5} \text{ minutes}$$

$$\therefore \text{ Time taken in 15 rounds} = \frac{24}{5} \times 15 \text{ minutes}$$

$$= 72 \text{ minutes}$$

$$= 1 \text{ hour } 12 \text{ minutes}$$

Question 11.

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Solution:

Weight of Amit = 35 kg.

$$\text{Weight of Kavita} = \frac{3}{5} \text{ of Amit's weight}$$

$$= \frac{3}{5} \times 35 \text{ kg} = 21 \text{ kg}$$

Question 12.

Solution:

Total number of students in a class = 42

Number of boys = 57 of 42 = 5 x 6 = 30

Number of girls = 42 – 30 = 12

Question 13.

Solution:

Sapna total income for one month = Rs 24000

Amount spent = 78 of her income

= 78 x 24000

= Rs (7 x 3000) = Rs 21000

Amount deposited in the bank per month = Rs 24000 – 21000 = Rs 3000

Question 14.

Solution:

Length of each side of a square

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$$= 4\frac{2}{3}\text{m} = \frac{14}{3}\text{ m.}$$

$$\therefore \text{ Area} = \text{side} \times \text{side} = \frac{14}{3} \times \frac{14}{3} \text{ square m}$$

$$= \frac{196}{9} = 21\frac{7}{9} \text{ square metres}$$

Question 15.

Solution:

Length of rectangular field (l)

$$= 41\frac{2}{3}\text{m} = \frac{125}{3}\text{ m}$$

$$\text{Breadth } (b) = 18\frac{3}{5}\text{ m} = \frac{93}{5}\text{ m}$$

$$\therefore \text{ Area} = l \times b = \frac{125}{3} \times \frac{93}{5}\text{ m}^2$$

$$= 25 \times 31\text{ m}^2$$

$$= 775\text{ m}^2$$

Ex 2C

Question 1.

Solution:

(*i*) Reciporical of $\frac{5}{8}$ is $\frac{8}{5}$

(*ii*) Reciporical of 7 is $\frac{1}{7}$

(*iii*) Reciporical of $\frac{1}{12}$ is 12

(*iv*) Reciporical of $12\frac{3}{5}$ or $\frac{63}{5}$ is $\frac{5}{63}$

(*i*) $\frac{4}{7} \div \frac{9}{14} = \frac{4}{7} \times \frac{14}{9} = \frac{4 \times 2}{9} = \frac{8}{9}$

(*ii*) $\frac{7}{10} \div \frac{3}{5} = \frac{7}{10} \times \frac{5}{3} = \frac{7 \times 1}{2 \times 3} = \frac{7}{6} = 1\frac{1}{6}$

(*iii*) $\frac{8}{9} \div 16 = \frac{8}{9} \times \frac{1}{16} = \frac{1 \times 1}{9 \times 2} = \frac{1}{18}$

(*iv*) $9 \div \frac{1}{3} = 9 \times \frac{3}{1} = 27$

(*v*) $24 \div \frac{6}{7} = \frac{24}{1} \times \frac{7}{6} = \frac{4 \times 7}{1} = 28$

(*vi*) $3\frac{3}{5} \div \frac{4}{5} = \frac{18}{5} \div \frac{4}{5} = \frac{18}{5} \times \frac{5}{4} = \frac{9 \times 1}{1 \times 2} = \frac{9}{2} =$

$4\frac{1}{2}$

Question 2.

Solution:

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(i) $\frac{4}{7} \div \frac{9}{14} = \frac{4}{7} \times \frac{14}{9} = \frac{4 \times 2}{9} = \frac{8}{9}$

(ii) $\frac{7}{10} \div \frac{3}{5} = \frac{7}{10} \times \frac{5}{3} = \frac{7 \times 1}{2 \times 3} = \frac{7}{6} = 1\frac{1}{6}$

(iii) $\frac{8}{9} \div 16 = \frac{8}{9} \times \frac{1}{16} = \frac{1 \times 1}{9 \times 2} = \frac{1}{18}$

(iv) $9 \div \frac{1}{3} = 9 \times \frac{3}{1} = 27$

(v) $24 \div \frac{6}{7} = \frac{24}{1} \times \frac{7}{6} = \frac{4 \times 7}{1} = 28$

(vi) $3\frac{3}{5} \div \frac{4}{5} = \frac{18}{5} \div \frac{4}{5} = \frac{18}{5} \times \frac{5}{4} = \frac{9 \times 1}{1 \times 2} = \frac{9}{2} =$

$4\frac{1}{2}$

(vii) $3\frac{3}{7} \div \frac{8}{21} = \frac{24}{7} \times \frac{8}{21} = \frac{24}{7} \times \frac{21}{8} = \frac{3 \times 3}{1 \times 1}$

$= 9$

(viii) $5\frac{4}{7} \div 1\frac{3}{10} = \frac{39}{7} \div \frac{13}{10} = \frac{39}{7} \times \frac{10}{13}$

$= \frac{3 \times 10}{7 \times 1} = \frac{30}{7} = 4\frac{2}{7}$

(ix) $15\frac{3}{7} \div 1\frac{23}{49} = \frac{108}{7} \div \frac{72}{49} = \frac{108}{7} \times \frac{49}{72}$

$= \frac{3 \times 7}{1 \times 2} = \frac{21}{2} = 10\frac{1}{2}$

Question 3.

Solution:

$$(i)\ \frac{11}{24} \text{ by } \frac{7}{8} = \frac{11}{24} \div \frac{7}{8}$$

$$= \frac{11}{24} \times \frac{8}{7} = \frac{11 \times 1}{3 \times 7} = \frac{11}{21}$$

$$(ii)\ 6\frac{7}{8} \text{ by } \frac{11}{16} = \frac{55}{8} \div \frac{11}{16}$$

$$= \frac{55}{8} \times \frac{16}{11} = \frac{5 \times 2}{1} = 10$$

$$(iii)\ 5\frac{5}{9} \text{ by } 3\frac{1}{3} = \frac{50}{9} \div \frac{10}{3}$$

$$= \frac{50}{9} \times \frac{3}{10} = \frac{5 \times 1}{3 \times 1} = \frac{5}{3} = 1\frac{2}{3}$$

$$(iv)\ 32 \text{ by } 1\frac{3}{5} = 32 \div \frac{8}{5}$$

$$= 32 \times \frac{5}{8} = \frac{4 \times 5}{1} = 20$$

$$(v)\ 45 \text{ by } 1\frac{4}{5} = 45 \div \frac{9}{5}$$

$$= 45 \times \frac{5}{9} = \frac{5 \times 5}{1} = 25$$

$$(vi)\ 63 \text{ by } 2\frac{1}{4} = 63 \div \frac{9}{4}$$

$$= 63 \times \frac{4}{9} = \frac{7 \times 4}{1} = 28.$$

Question 4.

Solution:

$$\text{Total length of the rope} = 13\frac{1}{2} = \frac{27}{2} \text{ m}$$

$$\text{Number of pieces} = 9$$

$$\therefore \text{ Length of each piece} = \frac{27}{2} \div 9 = \frac{27}{2} \times \frac{1}{9}$$

$$= \frac{3 \times 1}{2 \times 1} = \frac{3}{2} = 1\frac{1}{2} \text{ m}$$

Question 5.

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Solution:

Total weight of 18 boxes

$$= 49\frac{1}{2}\text{ kg} = \frac{99}{2}\text{ kg}$$

$$\therefore \text{ Weight of 1 box} = \left(\frac{99}{2} \div 18\right)\text{ kg}$$

$$= \frac{99}{2} \times \frac{1}{18} = \frac{11}{2\times 2} = \frac{11}{4}\text{ kg}$$

$$= 2\frac{3}{4}\text{ kg}$$

Question 6.

Solution:

Total amount of oranges=Rs 378

$$\text{and price of one orange} = \text{Rs } 6\frac{3}{4}$$

$$\therefore \text{ Total number of oranges}$$

$$= \text{Rs } 378 \div \text{Rs } 6\frac{3}{4} \qquad = 378 \times \frac{4}{27} = 14 \times 4$$

$$= 378 \div \frac{27}{4} \qquad = 56$$

Question 7.

Solution:

Question 8.

Solution:

Distance covered in $7\frac{3}{4}$ hours $= 20\frac{2}{3}$ km

$\therefore$ Distance covered in one hour

$= 20\frac{2}{3} \div 7\frac{3}{4}$

$= \left(\frac{62}{3} \div \frac{31}{4}\right)$ km

$= \frac{62}{3} \times \frac{4}{31} = \frac{2 \times 4}{3}$ km

$= \frac{8}{3}$ km $= 2\frac{2}{3}$ km

Question 9.

Solution:

Price of $8\frac{1}{2}$ kg of sugar $=$ Rs $242\frac{1}{4}$

$\therefore$ Price of one kg $=$ Rs $242\frac{1}{4} \div 8\frac{1}{2}$

$= \text{Rs}\left(\frac{969}{4} \div \frac{17}{2}\right)$

$= \text{Rs}\ \frac{969}{4} \times \frac{2}{17} = \text{Rs}\ \frac{57 \times 1}{2 \times 1}$

$= \text{Rs}\ \frac{57}{2} = \text{Rs}\ 28\frac{1}{2}$

Question 10.

Solution:

$$\text{Cost of one notebook} = \text{Rs } 27\frac{3}{4} = \text{Rs } \frac{111}{4}$$

$$\text{Total amount} = \text{Rs } 249\frac{3}{4} = \text{Rs } \frac{999}{4}$$

$$\therefore \text{ Number of notebooks can be purchased}$$

$$= \frac{999}{4} \div \frac{111}{4}$$

$$= \frac{999}{4} \times \frac{4}{111} = 9$$

Question 11.

Solution:

$$\text{Price of one ticket} = \text{Rs } 32\frac{1}{2} = \text{Rs } \frac{65}{2}$$

$$\text{Total amount collected} = \text{Rs } 877\frac{1}{2}$$

$$= \text{Rs } \frac{1755}{2}$$

$$\therefore \text{ Number of tickets sold} = \text{Rs } \frac{1755}{2} \div \frac{65}{2}$$

$$= \frac{1755}{2} \times \frac{2}{65} = 27$$

Question 12.

Solution:

$$\text{Contribution by each student} = \text{Rs } 261\frac{1}{2}$$

$$= \text{Rs } \frac{523}{2}$$

$$\text{Total contribution collected} = \text{Rs } 2876\frac{1}{2}$$

$$= \text{Rs } \frac{5753}{2}$$

$$\therefore \text{ Number of students} = \text{Rs } \frac{5753}{2} \div \frac{523}{2}$$

$$= \frac{5753}{2} \times \frac{2}{523} = 11$$

Question 13.

Solution:

Total quantity of milk = 24 litres

and quantity of milk got by one student = 25 litres

$$\therefore \text{ Number of students} = \left(24 \div \frac{2}{5}\right)$$

$$= 24 \times \frac{5}{2} = 60$$

Question 14.

Solution:

Quantity of water in a bucket

$= 20\frac{1}{4}\ l = \frac{81}{4}l$

Quantity of water in a jug $= \frac{3}{4}\ l$

$\therefore$ Number of jugs which to be filled

$= \frac{81}{4}l \div \frac{3}{4}l$

$= \frac{81}{4} \times \frac{4}{3} = 27$

Question 15.

Solution:

$$\text{Product of two numbers} = 15\frac{5}{6} = \frac{95}{6}$$

$$\text{One number} = 6\frac{1}{3} = \frac{19}{3}$$

$$\therefore \quad \text{Second number} = \frac{95}{6} \div \frac{19}{3}$$

$$= \frac{95}{6} \times \frac{3}{19} = \frac{5 \times 1}{2 \times 1} = \frac{5}{2}$$

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

Question 16.

Solution:

Product of two numbers = 42

$$\text{One number} = 9\frac{4}{5} = \frac{49}{5}$$

$$\therefore \text{ Second number} = 42 \div \frac{49}{5} = 42 \times \frac{5}{49}$$

$$= \frac{6 \times 5}{7} = \frac{30}{7} = 4\frac{2}{7}$$

Question 17.

Solution:

$$\text{Product of two numbers} = 6\frac{2}{9} = \frac{56}{9}$$

$$\text{One number} = 4\frac{2}{3} = \frac{14}{3}$$

$$\therefore \text{ Required number} = \frac{56}{9} \div \frac{14}{3}$$

$$= \frac{56}{9} \times \frac{3}{14} = \frac{4 \times 1}{3 \times 1} = \frac{4}{3} = 1\frac{1}{3}$$

Ex 2D

OBJECTIVE QUESTIONS

Mark (√) against the correct answer in each of the following:

Question 1.

Solution:

(c)

Denominator in (a) and (b) is 10

These are decimal fractions

But denominator of (c) is 3

103 is a vulgar fraction

Question 2.

Solution:

(c)

710 and 79 are proper fractions as each of these have numerator less than its denominator

97 is improper fraction

Question 3.

Solution:

(a)

105112 is reducible fraction because HCF 112 of 105 and 112 is 7

Question 4.

Solution:

(c)

$$\because \frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}, \frac{6}{9} = \frac{6 \div 3}{9 \div 3} = \frac{2}{3}$$

$$\text{and } \frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

$$\therefore \text{ Each of these fractions} = \frac{2}{3}$$

Question 5.

Solution:

(c)

$$\frac{9}{16}=\frac{13}{24} \quad \Rightarrow 9 \times 24=13 \times 16$$

$$\Rightarrow \quad 216=208, \text{ which is not true.}$$

$$\frac{9}{16}<\frac{13}{24} \quad \Rightarrow 9 \times 24<13 \times 16$$

$$\Rightarrow \quad 216<208 \text{ which is not true}$$

$$\frac{9}{16}>\frac{13}{24} \quad \Rightarrow 9 \times 24>13 \times 16$$

$$\Rightarrow \quad 216>208 \text{ which is true.}$$

Question 6.

Solution:

(d)

Reciprocal of $1\frac{3}{4}$ or $\frac{7}{4}$ is $\frac{4}{7}$.

But none of these $1\frac{4}{3}, 4\frac{1}{3}$ is $3\frac{1}{4}$ is equal to $\frac{4}{7}$

$\therefore$ None of these is recoprocal of $1\frac{3}{4}$

Question 7.

Solution:

(c)

$$\frac{3}{10}+\frac{8}{15}=\frac{9+16}{30}=\frac{25}{30}=\frac{5}{6}$$

Question 8.

Solution:

(d)

$$\because 3\frac{1}{4}-2\frac{1}{3}=\frac{13}{4}-\frac{7}{3}=\frac{39-28}{12}=\frac{11}{12}$$

Question 9.

Solution:

(d)

$$36\div\frac{1}{4}=36\times\frac{4}{1}=144$$

Question 10.

Solution:

(b)

$\because$ Product $= 1\frac{6}{7} = \frac{13}{7}$

One number $= 2\frac{3}{5} = \frac{13}{5}$

$\therefore$ Second required number $= \frac{13}{7} \div \frac{13}{5}$

$= \frac{13}{7} \times \frac{5}{13} = \frac{5}{7}$

Question 11.

Solution:

(d)

Required number $= 1\frac{1}{2} \div \frac{2}{3} = \frac{3}{2} \div \frac{2}{3}$

$= \frac{3}{2} \times \frac{3}{2} = \frac{9}{4} = 2\frac{1}{4}$

Question 12.

Solution:

(c)

$\frac{8}{5} \div \frac{2}{3} = \frac{8}{5} \times \frac{3}{2} = \frac{12}{5} = 2\frac{2}{5}$

Question 13.

Solution:

(d)

$$\frac{11}{5} \div \frac{6}{5} = \frac{11}{5} \times \frac{5}{6} = \frac{11}{6} = 1\frac{5}{6}$$

Question 14.

Solution:

(d)

$$\text{Reciprocal of } 1\frac{2}{3}$$

$$\text{or } \frac{5}{3} \text{ is } \frac{3}{5}$$

Question 15.

Solution:

(b)

The correct statement will be

$$\frac{2}{3}, \frac{3}{5}, \frac{14}{15}$$

$$\frac{10, 9, 14}{15}$$

$$\text{L.C.M. of } 3, 5, 15 = 15$$

$$9 < 10 < 14$$

$$\text{or } \frac{3}{5} < \frac{2}{3} < \frac{14}{15}$$

Question 16.

Solution:

(c)

A car runs in 1 litre of petrol = 16 km

$$\text{It will run in } 2\frac{3}{4} \text{ litres} = 16 \times 2\frac{3}{4} \text{ km}$$

$$= 16 \times \frac{11}{4} \text{ km}$$

$$= 44 \text{ km}$$

Question 17.

Solution:

(a)

$$\text{In one day, he reads} = 1\frac{3}{4} = \frac{7}{4} \text{ hr.}$$

$$\text{and in 6 days he will read} = \frac{7}{4} \times 6$$

$$= \frac{21}{2} \text{ hr.}$$

$$= 10\frac{1}{2} \text{ hours}$$

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