

Maharashtra Board Solutions Class 6-Maths (Practice Set 10): Chapter 4- Operations on Fractions



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Maharashtra Board Solutions Class 6-Maths (Practice Set 10): Chapter 4- Operations on Fractions

Class 6: Maths Chapter 4 solutions. Complete Class 6 Maths Chapter 4 Notes.

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Maharashtra Board 6th Maths Chapter 4, Class 6 Maths Chapter 4 solutions

Question 1.

Add:

i. $613+213$

ii. $114+312$

iii. $515+217$

iv. $315+213$

Solution:

i. $613+213$

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$$\begin{aligned}6\frac{1}{3} + 2\frac{1}{3} &= \frac{6 \times 3 + 1}{3} + \frac{2 \times 3 + 1}{3} \\&= \frac{18 + 1}{3} + \frac{6 + 1}{3} \\&= \frac{19}{3} + \frac{7}{3} \\&= \frac{19 + 7}{3} \\&= \frac{26}{3} \\\therefore 6\frac{1}{3} + 2\frac{1}{3} &= 8\frac{2}{3}\end{aligned}$$

ii. $114 + 312$

$$\begin{aligned}1\frac{1}{4} + 3\frac{1}{2} &= \frac{1 \times 4 + 1}{4} + \frac{3 \times 2 + 1}{2} \\&= \frac{4+1}{4} + \frac{6+1}{2} \\&= \frac{5}{4} + \frac{7}{2} \\&= \frac{5}{4} + \frac{7 \times 2}{2 \times 2} \\&= \frac{5}{4} + \frac{14}{4} = \frac{5+14}{4} = \frac{19}{4}\end{aligned}$$

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

iii. $515 + 217$

$$\begin{aligned}5\frac{1}{5} + 2\frac{1}{7} &= \frac{5 \times 5 + 1}{5} + \frac{2 \times 7 + 1}{7} \\&= \frac{25 + 1}{5} + \frac{14 + 1}{7} \\&= \frac{26}{5} + \frac{15}{7} \\&= \frac{26 \times 7}{5 \times 7} + \frac{15 \times 5}{7 \times 5} \\&= \frac{182}{35} + \frac{75}{35} \\&= \frac{182 + 75}{35} \\&= \frac{257}{35}\end{aligned}$$

$$\therefore 5\frac{1}{5} + 2\frac{1}{7} = 7\frac{12}{35}$$

iv. $315 + 213$

$$\begin{aligned}3\frac{1}{5} + 2\frac{1}{3} &= \frac{3 \times 5 + 1}{5} + \frac{2 \times 3 + 1}{3} \\&= \frac{15 + 1}{5} + \frac{6 + 1}{3} \\&= \frac{16}{5} + \frac{7}{3} \\&= \frac{16 \times 3}{5 \times 3} + \frac{7 \times 5}{3 \times 5} \\&= \frac{48}{15} + \frac{35}{15} \\&= \frac{48 + 35}{15} \\&= \frac{83}{15}\end{aligned}$$

$$\therefore 3\frac{1}{5} + 2\frac{1}{3} = 5\frac{8}{15}$$

Question 2.

Subtract:

- i. 313–114
- ii. 512–313
- iii. 718–6110
- iv. 712–315

Solution:

- i. 313–114

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$$\begin{aligned}3\frac{1}{3}-1\frac{1}{4} &= \frac{3 \times 3 + 1}{3} - \frac{1 \times 4 + 1}{4} \\&= \frac{9+1}{3} - \frac{4+1}{4} \\&= \frac{10}{3} - \frac{5}{4} \\&= \frac{10 \times 4}{3 \times 4} - \frac{5 \times 3}{4 \times 3} \\&= \frac{40}{12} - \frac{15}{12} \\&= \frac{40-15}{12} = \frac{25}{12}\end{aligned}$$

$$\therefore 3\frac{1}{3}-1\frac{1}{4} = 2\frac{1}{12}$$

ii. 512-313

$$\begin{aligned}5\frac{1}{2}-3\frac{1}{3} &= \frac{5 \times 2 + 1}{2} - \frac{3 \times 3 + 1}{3} \\&= \frac{10+1}{2} - \frac{9+1}{3} \\&= \frac{11}{2} - \frac{10}{3} \\&= \frac{11 \times 3}{2 \times 3} - \frac{10 \times 2}{3 \times 2} \\&= \frac{33}{6} - \frac{20}{6} \\&= \frac{33-20}{6} = \frac{13}{6}\end{aligned}$$

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

iii. 718-6110

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$$\begin{aligned}7\frac{1}{8} - 6\frac{1}{10} &= \frac{7 \times 8 + 1}{8} - \frac{6 \times 10 + 1}{10} \\&= \frac{56 + 1}{8} - \frac{60 + 1}{10} \\&= \frac{57}{8} - \frac{61}{10} \\&= \frac{57 \times 5}{8 \times 5} - \frac{61 \times 4}{10 \times 4} \\&= \frac{285}{40} - \frac{244}{40} \\&= \frac{285 - 244}{40} = \frac{41}{40}\end{aligned}$$

$$\therefore 7\frac{1}{8} - 6\frac{1}{10} = 1\frac{1}{40}$$

iv. 712-315

$$\begin{aligned}7\frac{1}{2} - 3\frac{1}{5} &= \frac{7 \times 2 + 1}{2} - \frac{3 \times 5 + 1}{5} \\&= \frac{14 + 1}{2} - \frac{15 + 1}{5} \\&= \frac{15}{2} - \frac{16}{5} \\&= \frac{15 \times 5}{2 \times 5} - \frac{16 \times 2}{5 \times 2} \\&= \frac{75}{10} - \frac{32}{10} \\&= \frac{75 - 32}{10} = \frac{43}{10}\end{aligned}$$

$$\therefore 7\frac{1}{2} - 3\frac{1}{5} = 4\frac{3}{10}$$

Question 3.

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Solve:

- i. Suyash bought 212 kg of sugar and Ashish bought 312 kg. How much sugar did they buy altogether? If sugar costs Rs 32 per kg, how much did they spend on the sugar they bought?
- ii. Aradhana grows potatoes in 25 part of her garden, greens in 13 part and brinjals in the remaining part. On how much of her plot did she plant brinjals?
- iii. Sandeep filled water in 47 of an empty tank. After that, Ramakant filled 14 part more of the same tank. Then Umesh used 314 part of the tank to water the garden. If the tank has a maximum capacity of 560 litres, how many litres of water will be left in the tank?

Solution:

i. Sugar bought by Suyash = 212 kg

Sugar bought by Ashish = 312 kg

∴ Total sugar bought by both

$$\begin{aligned} &= 2\frac{1}{2} + 3\frac{1}{2} \\ &= \frac{2 \times 2 + 1}{2} + \frac{3 \times 2 + 1}{2} \\ &= \frac{4+1}{2} + \frac{6+1}{2} = \frac{5}{2} + \frac{7}{2} = \frac{5+7}{2} = \frac{12}{2} = 6 \text{ kg} \end{aligned}$$

Cost of 1 kg of sugar = Rs 32

∴ Cost of 6 kg of sugar = 32 x 6

= Rs 192

∴ They bought 6 kg sugar altogether and the total money spent on sugar is Rs 192.

ii. Part of garden occupied by potatoes = 25

Part of garden occupied by greens = 13

Since brinjals are planted in the remaining part,

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∴ (Part occupied by potatoes) + (part occupied by greens) + (part occupied by brinjals) = 1 entire garden.

∴ Part of garden occupied by brinjals = 1 – (part of garden occupied by potatoes + part of garden occupied by greens)

$$\begin{aligned} &= 1 - \left(\frac{2}{5} + \frac{1}{3} \right) \\ &= 1 - \left(\frac{2 \times 3}{5 \times 3} + \frac{1 \times 5}{3 \times 5} \right) \\ &= 1 - \left(\frac{6}{15} + \frac{5}{15} \right) = 1 - \left(\frac{6+5}{15} \right) \\ &= 1 - \frac{11}{15} = \frac{1 \times 15}{1 \times 15} - \frac{11}{15} = \frac{15}{15} - \frac{11}{15} = \frac{15-11}{15} = \frac{4}{15} \end{aligned}$$

∴ Aradhana planted brinjals on $\frac{4}{15}$ part of her plot.

iii. Part of tank filled by Sandeep = $\frac{4}{7}$

Part of tank filled by Ramakant = $\frac{1}{4}$

$$\begin{aligned} \therefore \text{Part of tank filled by both of them together} &= \frac{4}{7} + \frac{1}{4} \\ &= \frac{4 \times 4}{7 \times 4} + \frac{1 \times 7}{4 \times 7} = \frac{16}{28} + \frac{7}{28} = \frac{16+7}{28} = \frac{23}{28} \end{aligned}$$

$$\text{Part of tank used by Umesh} = \frac{3}{14}$$

$$\therefore \text{Part of tank filled with water} = \frac{23}{28} - \frac{3}{14} = \frac{23}{28} - \frac{3 \times 2}{14 \times 2} = \frac{23}{28} - \frac{6}{28} = \frac{23-6}{28} = \frac{17}{28}$$

Since maximum capacity of tank is 560 litres

∴ Quantity of water left in tank = $1728 \times 560 = 340$ litres

∴ The quantity of water left in the tank is 340 litres.

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Questions and Activities

Question 1.

How to do this subtraction: $414-212$? Is it same as $[4-2+14-12]$? (Textbook pg. no. 23)

Solution:

$$414-212$$

$$4\frac{1}{4} - 2\frac{1}{2} = \frac{4 \times 4 + 1}{4} - \frac{2 \times 2 + 1}{2}$$

$$= \frac{17}{4} - \frac{5}{2}$$

$$= \frac{17}{4} - \frac{5 \times 2}{2 \times 2}$$

$$= \frac{17}{4} - \frac{10}{4}$$

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

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

$$[4-2+14-12]$$

$$\begin{aligned}4 - 2 + \frac{1}{4} - \frac{1}{2} &= 2 + \frac{1}{4} - \frac{1 \times 2}{2 \times 2} \\&= 2 + \frac{1}{4} - \frac{2}{4} \\&= 2 + \frac{-1}{4} \\&= \frac{2 \times 4}{1 \times 4} + \frac{-1}{4} \\&= \frac{8}{4} - \frac{1}{4} \\&= \frac{8-1}{4} = \frac{7}{4} = 1\frac{3}{4}\end{aligned}$$

The subtraction $414 - 212$ is the same as $[4 - 2 + 14 - 12]$.



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- Chapter 3- Integers (Practice Set 8)
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- Chapter 4- Operations on Fractions (Practice Set 11)
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- Chapter 9- HCF-LCM (Practice Set 25)
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- Chapter 12- Percentage (Practice Set 30)
- Chapter 13- Profit-Loss (Practice Set 31)
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- Chapter 13- Profit-Loss (Practice Set 33)
- Chapter 13- Profit-Loss (Practice Set 34)
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About About Maharashtra State Board (MSBSHSE)

The Maharashtra State Board of Secondary and Higher Secondary Education or MSBSHSE (Marathi: महाराष्ट्र राज्य माध्यमिक आणि उच्च माध्यमिक शिक्षण मंडळ), is an **autonomous and statutory body established in 1965**. The board was amended in the year 1977 under the provisions of the Maharashtra Act No. 41 of 1965.

The Maharashtra State Board of Secondary & Higher Secondary Education (MSBSHSE), Pune is an independent body of the Maharashtra Government. There are more than 1.4 million students that appear in the examination every year. The Maha State Board conducts the board examination twice a year. This board conducts the examination for SSC and HSC.

The Maharashtra government established the Maharashtra State Bureau of Textbook Production and Curriculum Research, also commonly referred to as Ebalbharati, in 1967 to take up the responsibility of providing quality textbooks to students from all classes studying under the Maharashtra State Board. MSBHSE prepares and updates the curriculum to provide holistic development for students. It is designed to tackle the difficulty in understanding the concepts with simple language with simple illustrations. Every year around 10 lakh students are enrolled in schools that are affiliated with the Maharashtra State Board.

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FAQs

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Who developed the Maharashtra State board books?

As of now, the MSCERT and Balbharti are responsible for the syllabus and textbooks of Classes 1 to 8, while Classes 9 and 10 are under the Maharashtra State Board of Secondary and Higher Secondary Education (MSBSHSE).

How many state boards are there in Maharashtra?

The Maharashtra State Board of Secondary & Higher Secondary Education, conducts the HSC and SSC Examinations in the state of Maharashtra through its nine Divisional Boards located at Pune, Mumbai, Aurangabad, Nasik, Kolhapur, Amravati, Latur, Nagpur and Ratnagiri.

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