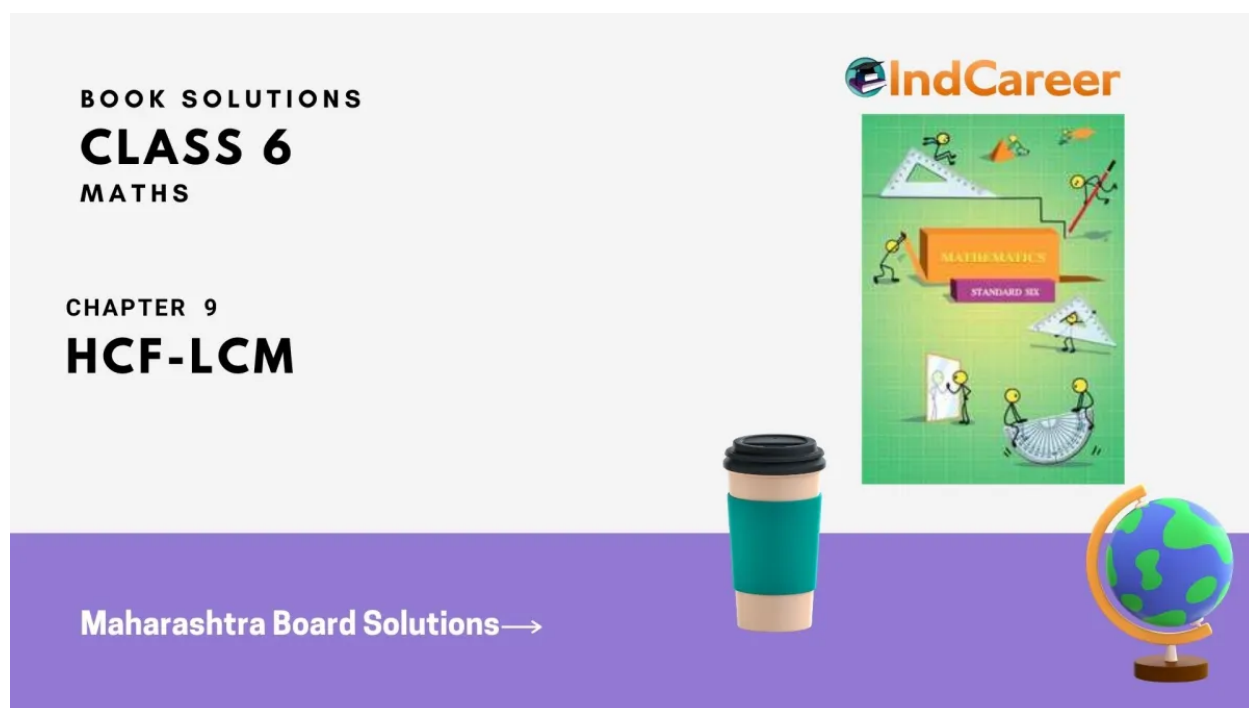


Maharashtra Board Solutions Class 6-Maths

(Practice Set 25): Chapter 9- HCF-LCM



For any clarifications or questions you can write to info@indcareer.com

Postal Address

IndCareer.com, 52, Shilpa Nagar, Somalwada Nagpur - 440015
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Maharashtra Board Solutions Class 6-Maths

(Practice Set 25): Chapter 9- HCF-LCM

Class 6: Maths Chapter 9 solutions. Complete Class 6 Maths Chapter 9 Notes.

Maharashtra Board Solutions Class 6-Maths (Practice Set 25): Chapter 9- HCF-LCM

Maharashtra Board 6th Maths Chapter 9, Class 6 Maths Chapter 9 solutions

Question 1.

Find out the LCM of the following numbers.

i. 9,15

ii. 2,3,5

iii. 12,28

iv. 15,20

v. 8,11

Solution:

i. Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90

Multiples of 15 = 15, 30, 45

∴ LCM of 9 and 15 = 45

ii. Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30

Multiples of 5 = 5, 10, 15, 20, 25, 30

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∴ LCM of 2, 3 and 5 = 30

iii. Multiples of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120

Multiples of 28 = 28, 56, 84

∴ LCM of 12 and 28 = 84

iv. Multiples of 15 = 15, 30, 45, 60, 75, 90, 105, 120

Multiples of 20 = 20, 40, 60

∴ LCM of 15 and 20 = 60

v. Multiples of 8 = 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96

Multiples of 11 = 11, 22, 33, 44, 55, 66, 77, 88

∴ LCM of 8 and 11 = 88

Question 2.

Solve the following problems:

i. On the playground, if the children are made to stand for drill either 20 to a row or 25 to a row, all rows are complete and no child is left out. What is the lowest possible number of children in that school?

ii. Veena has some beads. She wants to make necklaces with an equal number of beads in each. If She makes necklaces of 16 or 24 or 40 beads, there is no bead left over. What is the least number of beads with her?

iii. An equal number of laddoos have been placed in 3 different boxes. The laddoos in the first box were distributed among 20 children equally, the laddoos in the second box among 24 children and those in the third box among 12 children. Not a single laddoo was left over. What was the minimum number of laddoos in the three boxes altogether?

iv. We observed the traffic lights at three different squares on the same big road. They turn green every 60 seconds, 120 seconds and 24 seconds. When the signals are switched on at 8 o'clock in the morning, all the lights were green. How long after that will all three signals turn green simultaneously again?

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v. Given the fractions $\frac{13}{45}$ and $\frac{22}{75}$. Write their equivalent fractions with same denominators and add the fractions.

Solution:

i. The lowest possible number of children is equal to the lowest common multiple of 20 and 25.

Multiples of 20 = 20, 40, 60, 80, 100, 120, 140, 160, 180, 200

Multiples of 25 = 25, 50, 75, 100

$\therefore$ LCM of 20 and 25 = 100

$\therefore$ The least number of students in the school is 100.

ii. The least number of beads with Veena is equal to the lowest common multiple of 16, 24 and 40.

Multiples of 16 = 16, 32, 48, 64, 80, 96, 112, 128, 144, 160, 176, 192, 208, 224, 240, 256, 272, 288

Multiples of 24 = 24, 48, 72, 96, 120, 144, 168, 192, 216, 240

Multiples of 40 = 40, 80, 120, 160, 200, 240

$\therefore$ LCM of 16, 24 and 40 = 240

$\therefore$ The least number of beads with Veena are 240.

iii. The lowest common multiple of 20, 24 and 12 gives the minimum number of laddoos in one box.

Multiples of 20 = 20, 40, 60, 80, 100, 120, 140, 160, 180, 200

Multiples of 24 = 24, 48, 72, 96, 120

Multiples of 12 = 12, 24, 36, 48, 60, 72, 84, 96, 108, 120

$\therefore$ LCM of 20, 24 and 12 = 120

$\therefore$ Minimum number of laddoos in 1 boxes = 120

$\therefore$ Minimum number of laddoos in 3 boxes = $3 \times 120 = 360$

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∴ The minimum number of ladoos in 3 boxes are 360.

iv. All three signals will turn green for lowest common multiple of 60 seconds, 120 seconds and 24 seconds.

Multiples of 60 = 60, 120, 180, 240, 300, 360, 420, 480

Multiples of 120 = 120, 240, 360

Multiples of 24 = 24, 48, 72, 96, 120

LCM of 60, 120 and 24 = 120

Since, 60 seconds = 1 minute

∴ 120 seconds = 2 minutes

∴ The signals will turn green simultaneously again after 120 seconds i.e. 2 minutes.

v. The lowest common multiple of 45 and 75 gives the same denominator.

Multiples of 45 = 45, 90, 135, 180, 225, 270, 315, 360, 405, 450

Multiples of 75 = 75, 150, 336

∴ LCM of 45 and 75 = 225

$$\begin{aligned}\frac{13}{45} &= \frac{13 \times 5}{45 \times 5} = \frac{65}{225} \\ \frac{22}{75} &= \frac{22 \times 3}{75 \times 3} = \frac{66}{225} \\ \therefore \frac{13}{45} + \frac{22}{75} &= \frac{65}{225} + \frac{66}{225} = \frac{65+66}{225} = \frac{131}{225} \\ \therefore \text{Equivalent fractions of } \frac{13}{45} \text{ and } \frac{22}{75} &\text{ are } \frac{65}{225} \text{ and } \frac{66}{225} \text{ respectively, and the addition of } \frac{13}{45} \text{ and } \frac{22}{75} \text{ is } \frac{131}{225}.\end{aligned}$$

Questions and Activities

Question 1.

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Pravin, Bageshri and Yash are cousins who live in the same house. Pravin is an Army Officer. Bageshri is studying in a Medical College in another city. Yash lives in a nearby town in a hostel. Pravin can come home every 120 days.

Bageshri comes home every 45 days and Yash, every 30 days. All three of them left home at the same time on the 15th of June 2016. Their parents said, “We shall celebrate like a festival the day you all come home together.” Mother asked Yash, “What day will that be?”

Yash said, “The number of days after which we come back together must be divisible by 30, 120. That means we shall be back together on the 10th of June next year. That will certainly be a for us!”

How did Yash find the answer? (Textbook pg. no. 49)



Solution:

The day when Pravin, Bageshri and Yash come back together is lowest common multiple of 30, 45 and 120.

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Multiples of 30: 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, 360

Multiples of 45: 45, 90, 135, 180, 225, 270, 315, 360

Multiples of 120: 120, 240, 360

∴ They will come together after 360 days

Day when they left home = 15th June

∴ Day when they come back together = 15th June + 360 days

= 10th June next year

∴ Pravin, Bageshri and Yash will come back together on 10th June next year.

Question 2.

A Maths Riddle! (Textbook pg. no. 50)

We have four papers. On each of them there is a number on one side and some information on the other. The numbers on the papers are 7, 2, 15, 5. The information on the papers is given below in random order.

i. A number divisible by 7

ii. A prime number

iii. An odd number

iv. A number greater than 100

If the number on every paper is mismatched with the information on its other side, what is the number on the paper which says 'A number greater than 100'?

Solution:

	Reason	Outcome
Analysis		

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The paper having information (iii) 'an odd number' can be mismatched with the number '2' from the other available options.

Only the number '2' is an even number, while the rest are odd numbers.

The number '2' and (iii) 'an odd number' will appear on the opposite sides of the same paper.

Now, we are left with the numbers 7, 15 and 5. The paper having information (i) 'a number divisible by 7' can be mismatched with the number '5'.

The number '5' is not divisible by 7.

The number '5' and (i) 'a number divisible by 7' will appear on the opposite sides of the same paper.

Now, we are left with the numbers 7 and 15. The paper having information (ii) 'a prime number' can be mismatched with the number '15'.

The number '15' is not a prime number.

Hence, the number '15' and (ii) 'a prime number' will appear on the opposite sides of the same paper.



Maharashtra Board Solutions

Class 6 Maths

- Chapter 1- Basic Concepts in Geometry (Practice Set 1)
- Chapter 2- Angles (Practice Set 2)
- Chapter 2- Angles (Practice Set 3)
- Chapter 3- Integers (Practice Set 4)
- Chapter 3- Integers (Practice Set 5)
- Chapter 3- Integers (Practice Set 6)
- Chapter 3- Integers (Practice Set 7)
- Chapter 3- Integers (Practice Set 8)
- Chapter 4- Operations on Fractions (Practice Set 9)
- Chapter 4- Operations on Fractions (Practice Set 10)
- Chapter 4- Operations on Fractions (Practice Set 11)
- Chapter 4- Operations on Fractions (Practice Set 12)
- Chapter 4- Operations on Fractions (Practice Set 13)
- Chapter 5- Decimal Fractions (Practice Set 14)
- Chapter 5- Decimal Fractions (Practice Set 15)
- Chapter 5- Decimal Fractions (Practice Set 16)
- Chapter 5- Decimal Fractions (Practice Set 17)
- Chapter 6- Bar Graphs (Practice Set 18)
- Chapter 6- Bar Graphs (Practice Set 19)
- Chapter 7- Symmetry (Practice Set 20)
- Chapter 7- Symmetry (Practice Set 21)
- Chapter 8- Divisibility (Practice Set 22)

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- Chapter 9- HCF-LCM (Practice Set 23)
- Chapter 9- HCF-LCM (Practice Set 24)
- Chapter 9- HCF-LCM (Practice Set 25)
- Chapter 10- Equations (Practice Set 26)
- Chapter 10- Equations (Practice Set 27)
- Chapter 11- Ratio-Proportion (Practice Set 28)
- Chapter 11- Ratio-Proportion (Practice Set 29)
- Chapter 12- Percentage (Practice Set 30)
- Chapter 13- Profit-Loss (Practice Set 31)
- Chapter 13- Profit-Loss (Practice Set 32)
- Chapter 13- Profit-Loss (Practice Set 33)
- Chapter 13- Profit-Loss (Practice Set 34)
- Chapter 14- Banks and Simple Interest (Practice Set 35)
- Chapter 15- Triangles and their Properties (Practice Set 36)
- Chapter 16- Quadrilaterals (Practice Set 37)
- Chapter 16- Quadrilaterals (Practice Set 38)
- Chapter 17- Geometrical Constructions (Practice Set 39)
- Chapter 17- Geometrical Constructions (Practice Set 40)
- Chapter 18- Three Dimensional Shapes (Practice Set 41)

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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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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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