

SESSION 2024-25

CLASS: VIII**REVISION SHEET****SUBJECT: MATHEMATICS****Chapter: Rational Numbers**

Q1) What should be subtracted from $\frac{2}{3}$ to get $\frac{-11}{4}$?

Q2) The sum of two rational numbers is $\frac{-13}{5}$. If one of them is $\frac{8}{7}$, find the other.

Q3) If $x = \frac{-2}{5}$, $y = \frac{10}{27}$ and $z = -\frac{15}{16}$, verify that $x \times (y \times z) = (x \times y) \times z$.

Q4) Find using distributive property:

$$(i) \left\{ \frac{7}{5} \times \left(\frac{-3}{12} \right) \right\} + \left\{ \frac{7}{5} \times \frac{5}{12} \right\} \quad (ii) \left\{ \frac{9}{16} \times \frac{4}{12} \right\} + \left\{ \frac{9}{16} \times \frac{-3}{9} \right\}$$

Q5) The product of two rational numbers is $\frac{33}{58}$. If one of them is $\frac{44}{87}$, find the other.

Q6) Divide the sum of $\frac{13}{5}$ and $\frac{-12}{7}$ by the product of $\frac{-31}{7}$ and $\frac{1}{-2}$.

Chapter: Linear Equations in One Variables

Q1) MCQ: The denominator of a rational number is greater than its numerator by 3 then the rational number is

- (a) $x/(x+3)$ (b) $(x+3)/x$ (c) $(x-3)/x$ (d) $3/(x+3)$

Q2) After 14 years, I shall be three times as old as I was 4 years ago. What is my present age?

Q3) One fourth of total number of students in a class are in Math lab, one third are in Physics lab, one sixth are in Chemistry lab and 10 are in Biology lab. How many students are there in the class?

Q4) Two equal sides of a triangle are 4m less than three times the third side. Find the dimensions of the triangle if the perimeter of the triangle is 55m.

Q5) Solve the equations:

$$(i) \frac{3x-7}{5} = \frac{1-x}{-3} \quad (ii) \frac{y+1}{y-1} = \frac{2y+3}{2y+5}$$

Q6) The sum of two consecutive multiples of 5 is 55. Find these multiples.

Q7) Check whether the value given in the brackets is a solution to the given equation

$$5 - 3(5y + 2) = 4(7 - 3y) + 1 \quad [\text{for } y = -10]$$

Chapter: Understanding Quadrilaterals

Q1) MCQs

(i) The measure of each interior angle of a regular polygon of 12 sides is:

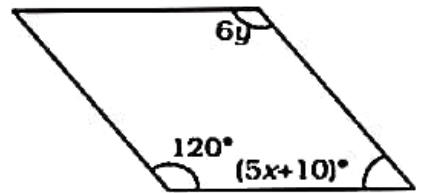
- (a) 150° (b) 140° (c) 130° (d) 70°

(ii) Find the number of sides of a regular polygon whose each exterior angle has measure 24° .

- (a) 15 (b) 24 (c) 8 (d) 7

Q2) Two angles of a quadrilateral are of 90° each. The third and the fourth angle are in the ratio 2: 3. Find the measure of the third and the fourth angle.

Q3) In the given parallelogram the three angles are of measures 120° , $6y^\circ$ and $(5x+10)^\circ$. Find the values of x and y .



Q4) The perimeter of a parallelogram is 150 cm. One of its sides is greater than the other by 25cm. Find the length of all the sides of the parallelogram.

Q5) Diagonal BD of rhombus ABCD is equal to one of its sides BC. Find the angles of the rhombus. Draw the figure in support of your answer.

Q6) State true or false. Also justify your answer

- (i) Every trapezium is a square.
- (ii) All squares are rectangles.
- (iii) Sum of all the angles of a trapezium is 360° .
- (iv) All squares are rhombuses.
- (v) All parallelograms are rectangles.

Chapter: Data Handling

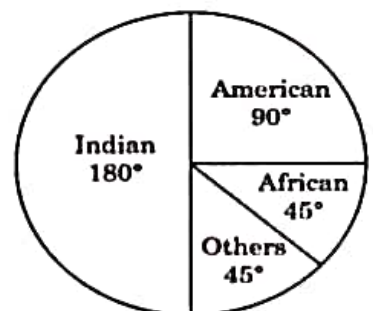
Q1) A die is thrown once. Find the probability of getting a number greater than or equal to 3.

Q2) A class consists of 11 boys and 9 girls. A student is to be selected for social work. Find the probability that

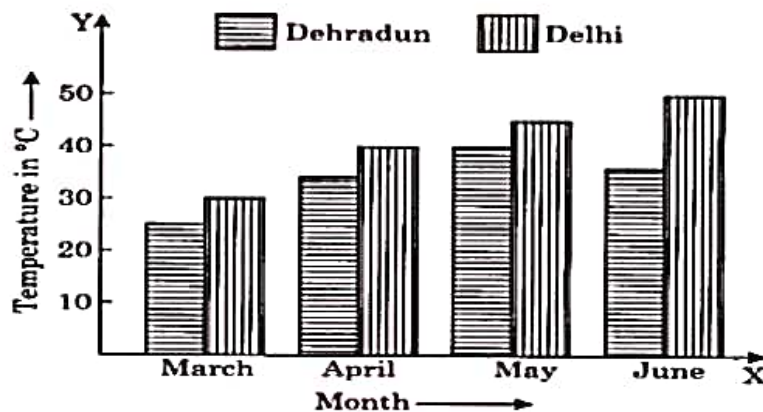
- (i) a girl is selected
- (ii) a boy is selected

Q3) The following pie chart depicts the percentage of students, nationwide. What is the percentage of

- (i) Indian students
- (ii) Non-African students?



Q4) The double bar graph shows the average monthly temperatures of two cities over 4 months period. Read the graph carefully and answer the questions given below:



- What does each 1 cm block on the vertical axis represent?
- What was the average monthly temperature in Dehradun in (a) March (b) April?
- What was the average monthly temperature in Delhi for the whole 4 months?
- In which month was the difference between the temperature of Delhi and Dehradun maximum and how much?

Q5) A bag contains 144 coloured balls represented by the following table. Draw a pie chart to show this information.

Colour	Number of balls
Red	12
Yellow	18
Blue	28
Green	42
White	44

Q6) Nishant's monthly income is ₹ 12000. He spends this money on different items as shown below. Represent the given information in the form of a Pie-Chart.

ITEM	FOOD	HOUSE RENT	EDUCATION	CLOTHING	ENTERTAINMENT
AMOUNT SPENT (₹)	3000	5000	2000	1000	1000

Q7) Numbers 1 to 10 are written on ten separate cards such that one number on one slip. These are mixed well and one slip is chosen from the box without looking into it. What is the probability of

- getting a card on which 6 is written?
- getting a card having two-digit number on it?
- getting a multiple of 5?
- getting a number more than 8?

Chapter: Squares and Square Roots

Q1) MCQ: The next two numbers in the number pattern 1, 4, 9, 16, 25 ... are

- (a) 35, 48 (b) 36, 49 (c) 36, 48 (d) 35, 49

Q2) Find the smallest perfect square divisible by 3, 4, 5 and 6.

Q3) Find the value of $\sqrt{248 + \sqrt{52 + \sqrt{144}}}$.

Q4) Given that $\sqrt{4096} = 64$, the value of $\sqrt{4096} + \sqrt{40.96}$

Q5) Find the smallest number by which 3645 should be divided so as to get a perfect square. Also, find the square root of the number so obtained.

Q6) Find the least number that must be added to 1500 so as to get a perfect square. Also find the square root of the perfect square.

Q7) Rahul walks 12m north from his house and turns west to walk 35m to reach his friend's house. While returning, he walks diagonally from his friend's house to reach back to his house. What distance did he walk while returning?

Chapter: Cubes and Cube Roots

Q1) MCQ: If m is the cube root of n , then n is

- (a) m^3 (b) $\sqrt{m}$ (c) $\frac{m}{3}$ (d) $\sqrt[3]{m}$

Q2) Find the cube root of 13824 by Prime Factorisation method.

Q3) Three numbers are in the ratio 4:3:2. The sum of their cubes is 792. Find the numbers.

Q4) Is 400 a perfect cube? If not, find the smallest natural number by which 400 should be multiplied so that the product is a perfect cube.

Q5) The volume of a cube is 125 cm^3 . What will be the volume of another cube whose sides are double of this cube?

Q6) Evaluate:

- (i) $\sqrt[3]{27} + \sqrt[3]{0.008} + \sqrt[3]{0.064}$
(ii) $\sqrt[3]{0.1 \times 0.1 \times 0.1 \times 13 \times 13 \times 13}$
(iii) $\sqrt[3]{-8 \times 17 \times 17 \times 17}$

Q7) Case-Study Based Question

Mohan has to prepare a physics project in the form of a cubical box for a social work campaign but he had a cuboidal box of sides 4 cm, 2 cm and 4 cm. Now he has to convert it in the form of cube so that he can complete his project. For this, he needed more cuboidal boxes of same dimensions so that he can prepare the cube. Based on the given information answer the following questions:

- (a) What is the volume of the cuboidal box?
(b) How many more cuboids are needed to make a cube?
(c) What will be the length of each side of the cube so formed?

Revision Part -2

RATIONAL NUMBERS

Choose the correct answer.

1. The associative property is applicable to:

- | | |
|--------------------------------|--------------------------------|
| A. Addition and subtraction | C. Addition and Multiplication |
| B. Multiplication and division | D. Subtraction and Division |

2. What is the difference of $\frac{2}{3}$ and $\frac{4}{9}$?

- | | | | |
|------------------|------------------|-------------------|-------------------|
| A. $\frac{2}{9}$ | B. $\frac{6}{9}$ | C. $\frac{10}{9}$ | D. $\frac{10}{3}$ |
|------------------|------------------|-------------------|-------------------|

3. What is the value of $\frac{3}{4} + \frac{5}{6} + \frac{2}{7}$?

- | | | | |
|--------------------|---------------------|---------------------|---------------------|
| A. $\frac{10}{84}$ | B. $\frac{134}{84}$ | C. $\frac{157}{84}$ | D. $\frac{167}{84}$ |
|--------------------|---------------------|---------------------|---------------------|

4. How many rational numbers are there in between $\frac{3}{4}$ and 1?

- | | | | |
|------|------|------|--------------|
| A. 0 | B. 1 | C. 2 | D. Countless |
|------|------|------|--------------|

5. The additive identity of rational numbers is:

- | | | | |
|------|------|-------|-------|
| A. 0 | B. 1 | C. -1 | D. -2 |
|------|------|-------|-------|

Fill in the blanks.

6. Additive inverse of $-\frac{7}{13}$ is _____

7. The multiplicative inverse of -17 is _____

8. _____ has no reciprocal.

9. The value of $(\frac{1}{2}) \div (\frac{3}{5})$ is equal to _____

10. The product of a non-zero rational number and its reciprocal is _____

Answer the following questions:

11. Multiply $7/13$ by the reciprocal of $-7/16$.

12. Using appropriate properties find:

$$\text{A) } \frac{2}{3} \times \frac{-5}{7} + \frac{7}{3} + \frac{2}{3} \times \frac{-2}{7}$$

$$\text{B) } \frac{7}{9} \times \frac{-2}{11} + \frac{2}{3} \times \frac{-7}{9} + \frac{5}{3}$$

13. Find the value of:

$$\text{A) } \frac{1}{12} + \frac{2}{9} - \frac{5}{6} + \frac{1}{3}$$

$$\text{B) } \frac{1}{2} - \frac{2}{3} - \frac{3}{4} - \frac{1}{6}$$

14. Find the value of:

$$\text{A) } \frac{9}{12} \times \frac{3}{8} \times \left(-\frac{30}{4}\right) \times \left(-\frac{1}{3}\right)$$

$$\text{B) } \frac{3}{4} \times \left[\frac{8}{9} - 40\right]$$

15. Add the additive inverse of $\left(\frac{-8}{9}\right)$ and the multiplicative inverse of $\frac{-18}{5}$.

LINEAR EQUATIONS IN ONE VARIABLE

Choose the correct option:

1. A linear equation in one variable has
 - a. One solution
 - b. Two solutions
 - c. More than two solutions
 - d. Cannot be determined
2. Arpita's present age is thrice of Shilpa. Suppose Shilpa's age three years ago was x . Then Arpita's present age is
 - a. $3(x - 3)$
 - b. $3x + 3$
 - c. $3x - 9$
 - d. $3(x + 3)$
3. The sum of three consecutive multiples of 7 is 357. Then the smallest of the three multiples is _____.
 - a. 112
 - b. 126
 - c. 119
 - d. 116
4. Which of the following is a linear expression:
 - a. $y^2 + 1$
 - b. $z + z^2$
 - c. 4
 - d. $1 + x$

Fill in the blanks:

5. A term of an equation can be transposed to the other side by changing its _____.
6. $9x - \underline{\hspace{2cm}} = -21$ has the solution (-2)

State true or false:

7. If x is an even number, then the next even number is $2(x + 1)$.

Solve the following and verify the solution:

8. $4t - 3 - (3t + 1) = 5t - 4$
9. $\frac{y - (4 - 3y)}{2y - (3 + 4y)} = \frac{1}{5}$
10. $\frac{3z + 5}{4} - 1 = \frac{4z - 3}{5}$
11. $0.25(4x - 5) = 0.75x + 8$
12. $4(3p + 2) - 5(6p - 1) = 2(p - 8) - 6(7p - 4)$

CHAPTER 05: SQUARE AND SQUARE ROOTS

Fill in the blanks from Q.1 to Q.7

1. If there are n odd number of digits in a perfect square, then its square root will have _____ digits.
2. For any natural number $m > 1$, (_____, _____, _____) is the Pythagorean triplet.
3. A number ending with _____, _____, _____, _____ can never be a perfect square.
4. A perfect square multiple of 10 ends with _____ number of zeros.
5. Prime factorization and long division are methods for finding _____.
6. The sum of first six odd natural numbers is _____.
7. The number of digits in the square root of 54756 is _____.

Choose the correct option from Q.8 to Q.13

8. The unit digit of the square of 5626 is
a). 2 b). 3 c). 5 d). 6
9. Using property $(n+1)^2 - n^2 = 2n+1$, where n is natural number; Find $281^2 - 280^2$
a) 560 b).650 c).561 d).651
10. How many perfect square numbers lies between 60 and 70 ?
a). 0 b). 1 c). 2 d). 3
11. 11025 students are arranged in a square for a School Choir in a Stadium. Find the number of students in each row.
(a) 115 (b) 625 (c) 105 (d) 15
12. The least number to be subtracted from 743 to get a perfect square is:
(a) 14 (b) 41 (c) 98 (d) 118
13. The square root of 0.9 is:
(a) 0.3 (b) 0.03 (c) 0.81 (d) 0.94

Short Questions 14 to 21

14. Find the Pythagorean Triplet whose one of the members is 35.
15. Find the Square root 121 by repeated subtraction.
16. By which least number should we multiply 735 to make it a perfect Square.
17. By which least number should we divide 2448 to make it a perfect Square.
18. Find the shortest side of the right-angled triangle, if its other two sides are of the length 48 cm and 50 cm.
19. Find the square of 65, 49 and $4\frac{3}{5}$
20. Find the Square root of 49 , 6561, x^4 , $(y+x)^2$ and $(2x-3y)^6$
21. Find the greatest 3-digit number which is a perfect square?

Case Study based Question 22 to 23

22. I am a state in New England. If you find the square root of half of 98, you'll know the number of letters in my name. What state am I?



Map of New England

23. The area of a rectangle and a square is equal. The length and the breadth of rectangle are 343 cm and 63 cm respectively.
 - a) Find the area of the reactangle.
 - b) Find the length of the side of the square.

Choose the correct answer from column II corresponding to column I

column I	column II			
$\sqrt{81 \times 36}$	486	54	324	2916
$\sqrt{\frac{49}{121}}$	$\frac{7}{11}$	$\frac{7}{121}$	$\frac{49}{121}$	$\frac{17}{121}$
$\sqrt{2^2 \times 5^4}$	250	100	50	2500
$\sqrt{25 \times 64}$	1600	40	160	400

CHAPTER 6: CUBE AND CUBE ROOTS

Choose the correct option from Q.1 to Q.4

Q.1 Cube of a negative number is

- (a) Negative (b) Positive
(c) Negative or Positive (d) None of these

Q.2 Cube of (-8) is

- (a) -512 (b) 512 (c) 64 (d) -64

Q.3 Which of the following is true?

- (a) The cube of an even natural no. is odd.
(b) The cube of an even no. is even.
(c) The cube of an odd natural is even.
(d) The cube of an odd natural no. is negative.

Q.4

If m is the cube root of n , then n is

- (a) m^3 (b) $\sqrt{m}$ (c) $\frac{m}{3}$ (d) $\sqrt[3]{m}$

Q.5 Fill in the blanks:

- (i) The least number by which 72 be multiplied to make it a perfect cube is _____
(ii) If $8X^3=216$, then X is _____
(iii) The cube of 0.5 is _____
(iv) There are _____ perfect cubes between 1 and 1000.
(v) The digit at the ones place of 233233 is _____
(vi) The cube of the even natural number is _____

Q.6 True and False

- (i) 648 is not perfect cube?
(ii) 999 is a perfect cube
(iii) Square of an integer is always positive, so the cube of that integer will also be positive
(iv) $125 \times 8 \times 27$ is a perfect cube

(v) For an integer p , p^3 is always greater than p^2

(vi) $0.8^3 = 5.12$

Solve from Q.7 to Q.14

Q.7 Find the cube of

- (a) -14 (b) 2.5 (c) 0.6 (d) -13

Q.8 Which of the following are perfect cubes? Give reasons.

- (a) 8640 (b) 13824 (c) 17516 (d) 1125

Q.9 Find the least number by which the following must be multiplied to make them perfect cubes.

- (a) 37044 (b) 5832 (c) 6561

Q.10 Find the least number by which the following must be divided to make them perfect cubes.

- (a) 6655 (b) 28672 (c) 10985

Q.11 Find the cube root of the following numbers by Prime Factorisation method.

- (a) 46656 (b) 4096 (c) 110592 (d) 1728

Q.12 Evaluate

- (a) $\sqrt[3]{\frac{1331}{9261}}$ (b) $\sqrt[3]{216 \times -4096}$ (c) $\sqrt[3]{\frac{2197}{15625}}$

Q.13 The volume of cubical box is 166375 m^3 . Find its edges.

Q.14 Find the cube root of

- (i) $\frac{864}{1372}$ (ii) $\frac{343}{125}$

Case Based Questions:

Q.15 Do prime factorisation of the number 26244.

- (i) By what smallest number should it be divided so that the quotient becomes a perfect cube?
(ii) Find the cube root of the quotient obtained in (i)
(iii) By which smallest number should it be multiplied so that the product is a perfect cube?
(iv) Find the cube root of the product obtained in (iii)