

INTERNATIONAL INDIAN SCHOOL - RIYADH

WORK SHEET 2016-17

SUB : MATHEMATICS

FA-1,FA-2 & SA-1

CLASS VIII

CH - 1 - RATIONAL NUMBERS

Fill in the blanks

1. The reciprocal of a negative rational number is _____ .
2. The additive inverse of $\frac{-a}{-b}$ is _____ .
3. The multiplicative inverse of $\frac{7}{-3}$ is _____ .
4. The multiplicative inverse of $-3 \times \frac{-2}{7}$ is _____ .
5. The sum of a rational number and its additive inverse is always _____ .
6. The product of a rational number and its multiplicative inverse is always _____ .
7. _____ has no reciprocal .
8. There are _____ rational numbers between -4 and -3 .
9. The number of integers lying between -4 and -3 is _____ .
10. The number of integers lying between -5 and 5 is _____ .

ANSWER THE FOLLOWING

11. Using appropriate properties . find

a) $\frac{3}{5} \times \left(\frac{-2}{7}\right) + \frac{3}{2} \times \frac{1}{5} + \left(\frac{-2}{7}\right) \times \frac{4}{5}$

b) $\frac{2}{7} \times \frac{3}{11} - \frac{5}{11} \times \frac{3}{7} + \frac{3}{11} \times \frac{4}{7}$

12. Name the property of multiplication used in each of the following .

a) $\frac{7}{9} \times 1 = 1 \times \frac{7}{9} = \frac{7}{9}$

b) $\frac{-2}{3} \times \frac{3}{-2} = 1$

c) $\frac{-5}{6} \times \frac{7}{15} = \frac{7}{15} \times \frac{-5}{6}$

d) $\frac{3}{4} \left(\frac{2}{7} - \frac{3}{5} \right) = \frac{3}{4} \times \frac{2}{7} - \frac{3}{4} \times \frac{3}{5}$

e) $\frac{8}{11} \times \left(\frac{1}{2} \times \frac{1}{3} \right) = \left(\frac{8}{11} \times \frac{1}{2} \right) \times \frac{1}{3}$

13. Multiply $\frac{6}{11}$ by the additive inverse of $\frac{11}{4}$.

14. Multiply $\frac{5}{12}$ by the reciprocal of $\frac{-5}{3}$.

15. Is $\frac{7}{9}$ multiplicative inverse of $-1\frac{2}{7}$? Give reason .

16. Represent the following rational numbers on the same Number line .

a) $\frac{-3}{5}$ b) $\frac{7}{5}$ c) $1\frac{1}{5}$ d) $\frac{-8}{5}$ e) 2

17. Represent the following rational numbers on the same number line . $\frac{1}{2}$, $\frac{1}{3}$, $\frac{7}{6}$, -1

18. Find five rational numbers between $\frac{-2}{7}$ and $\frac{3}{5}$.

19. Find ten rational numbers less than -2 .

20. Find ten rational numbers greater than -5 .

CH -2- LINEAR EQUATIONS IN ONE VARIABLE

Solve the following equations .

1. $x + 2 = 7$

2. $2x - 3 = 7$

$$3. \frac{3}{5} + x = \frac{18}{5}$$

$$4. \frac{2}{3}x = 4$$

$$5. 17 + 6a = 5$$

Solve and check your result .

$$6. 5x + \frac{11}{2} = \frac{3}{2} - 2x$$

$$7. 3a + \frac{8}{5} = 5a$$

$$8. 3m + \frac{3}{5} = 5m - \frac{2}{5}$$

$$9. X = \frac{3}{5} (x + 10)$$

Solve

$$10. \frac{3x + 5}{2x + 7} = 4$$

$$11. \frac{3x}{2x - 5} = \frac{12}{5}$$

$$12. \frac{1 + x}{1 - x} = \frac{2}{3}$$

Simplify and solve .

$$13. a) 3(9x - 7) = 2(5x - 3)$$

$$b) 5(0.3y - 5) = -3(1.5y + 11)$$

$$c) \frac{4x + 1}{3} + \frac{2x + 1}{2} = \frac{3x - 7}{5} + 6$$

$$d) \frac{m - 5}{4} = \frac{3 + 4m}{3} - \frac{x - 3}{6}$$

14. Sum of two numbers is 80 and their ratio is 3:5. Find the numbers.

15. The sum of three consecutive multiples of 6 is 666. Find the Multiples .

16. The denominator of a rational number is greater than the numerator by 6 . If the numerator is decreased by 2 and the

denominator is increased by 4 , the new rational number obtained is $\frac{1}{5}$. Find the original number .

17. A rational number is such that when you multiply it by $\frac{7}{12}$ and add $\frac{2}{3}$ to the product , you get 1 . What is the number ?
18. The ages of Ram and Shyam are in the ratio 5:7 . Four years from now the ratio of their ages will be 3:4 . Find their present ages .
19. Vandana is four times as old as her brother Ashish at present . After ten years she will be twice the age of her brother . Find their present ages .
20. The length of a rectangle is 5cm more than the breadth . If the perimeter of the rectangle is 40cm . Find the area of the rectangle .

CH - 6 - SQUARES AND SQUARE ROOTS

Fill in the blanks .

1. a) Square of an even number is _____ .
a) Square of an odd number is _____ .
b) If a number has _____ or _____ in the unit's place , then it's square ends in 1 .
c) If a number has _____ or _____ in the unit's place , then it's square ends in 9 .
d) Perfect square numbers end in _____ number of zeroes.
e) Sum of first "n" odd natural numbers is _____ .

- f) If a perfect square is of 4 digits , then its square root will have _____ digits .
- g) If a number has 4 or 6 in the unit's place , then it's square ends in _____ .
- h) If a perfect square is of 9 digits , then it's square root will have _____ digits .
- i) There are _____ non-perfect square numbers between the squares of the numbers m and $(m + 1)$.
2. Express the following perfect squares as the sum of two consecutive integers .
- a) 23^2 b) 17^2 c) 31^2
3. Find the sum of the following without adding .
- a) $1 + 3 + 5 + 7$ b) $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17$
4. Find the Pythagorean triplet whose smallest member is .
- a) 4 b) 10 c) 12
5. Find the least perfect square , that is exactly divisible by 8 , 9 and 10 .
6. Find the smallest number by which the following have to be multiplied , to make them a perfect square . Also find the square root of the square number so obtained .
- a) 1792 b) 3750
7. Find the smallest number by which the following have to be divided to make them a perfect square .
- a) 1734 b) 5040
8. Find the square root of the following by prime factorization .
- a) 576 b) 1225
9. Find the square root of the following by the long division method .
- a) 2809 b) 12544
10. Find the square root of the following by repeated subtraction .

a) 121

b) 144

11. Find the square root of the following decimals .

a) 33.64

b) 15.625

12. Find the least number which must be subtracted from the following to get a perfect square . Also find the square root of the perfect square so obtained .

a) 4931

b) 5607

13. Find the least number which must be added to make the following a perfect square . Also find the square root of the perfect square so obtained .

a) 3450

b) 7895

14. Find the greatest number of 5 digits that is a perfect square.

15. The students of a school went for an outing . If each student contributed as many rupees as there are students and the total amount collected was Rs 2704 , find the number of students who went for the outing .

16. The area of a square park is equal to that of a rectangular field of length 96m and breadth 54m . Find the length of the side of the square .

17. Find the square root of the following .

a) $\frac{121}{625}$

b) $\frac{225}{729}$

18. Find the value of the following .

a) $\sqrt{32} \times \sqrt{98}$

b) $\sqrt{48} \times \sqrt{108}$

c) $\sqrt{\frac{169}{256}}$

Chap.7 CUBES AND CUBE ROOTS

Fill in the blanks

1 a) _____ is the smallest Hardy - Ramanujan number .

b) Cube of an even number is _____ .

c) Cube of an odd number is _____ .

d) _____ is the inverse operation of cube .

e) _____ is the one's digit of the cube of 5027 .

2. What is the smallest number by which the following must be multiplied to obtain a perfect cube .

a) 864 b) 500 c) 1323

3. Find the smallest number by which each of the following must be divided to obtain a perfect cube .

a) 625 b) 243 c) 704

4. Which of the following are perfect cubes .

a) 343 b) 1029

c) 6400

5. Amit makes a cuboid having sides 3cm, 2cm, 3cm . How many such cuboids will be required to form a cube .

6. Find the cube root of the following by prime factorisation method .

a) 216 b) 3375 c) 21952

7. Find

a) $\sqrt[3]{\frac{343}{729}}$

b) $\sqrt[3]{144 \times 96}$

CH - 5 - DATA HANDLING

1. Fill in the blanks

- a) An experiment in which out come cannot be predicted in advance is called _____ .
- b) An unorganised form of a data is called a _____ .
- c) _____ gives the number of times a particular entry occurs .
- d) Difference between upper class limit and lower class limit is called the _____ or _____ of the class interval .
- e) Class size of the class interval 23 – 29 is _____ .

2. The pulse rate per minute of 30 persons was recorded as

61	71	75	62	78	68
78	66	71	71	80	76
72	63	81	72	60	74
82	73	75	69	66	84
67	69	74	81	79	74

Construct a frequency table using class intervals 60 – 65 , 65 – 70

70 - 75 etc and answer the following .

- a) Which class interval has the highest frequency ?
- b) Which class interval has the lowest frequency ?
- c) What is the upper limit of third class interval ?

3. The weekly wages (in Rs) of 24 workers in a factory are .

1525	1535	1825	1625	1675	1775
1800	1735	1575	1630	1615	1895
1825	1735	1725	1895	1775	1690
1585	1500	1755	1550	1660	1690

Using tally marks , make a frequency table with interval as 1550 – 1550 , 1550 – 1600 and so on .

4. Draw a histogram for the frequency table made for the data in question 3 and answer the following questions :

- a) What is the wage bracket which maximum number of workers are having ?
- b) How many workers are drawing Rs 1800 and above?
- c) How many workers are drawing less than Rs 1600?

5. Draw a histogram for the following data .

Class Interval	0 -- 10	10 --20	20 -- 30	30 --40	40 -- 50
Frequency	30	35	48	53	25

6. List the outcomes when three coins are tossed .

7. A die is thrown . What is the probability of getting .

- a) an even number
- b) an odd number
- c) number 3 or 4
- d) a number which is multiple of 4

8. 50 slips of paper containing numbers 1 to 50 are placed in a bag.

If one slip is taken out of the bag without seeing , what is the probability of the number on it being .

- a) a perfect square
- b) a single digit number
- c) a multiple of 5

9. A bag contains slips on which English alphabets a,b,c,....,x,y,z are written, if one slip is taken out , what is the probability that the slip contains .

- a) a vowel
- b) a consonant
- c) the letter 'm'

10. 15 boys and 10 girls appear in an examination. An answer sheet is picked up. What is the probability that it belongs to a boy?.

Prepared by :- VI - VIII Boys Section.