# Freedom Valley School, Bardoli

**Academic Year 2025-26**

**Class: 8th Sub: Maths** **C.W./H.W./P.W. W.S. No. 8**


**Student's Name: ……. Roll No.:…….**

**Issue Date: / /2025 Sub. Date: / /2025** **Sub. Teacher Sign** Principal's Sign

**Topic- Revision worksheet for PT2**

**Rational numbers**
**MCQ**

1. Associative property is not followed in _____
   (a) whole numbers (b) integers (c) natural numbers (d) rational numbers

2. ____ is the identity for the addition of rational numbers.
   (a) 1 (b) 0 (c) – 1 (d) $\frac{1}{2}$

3. ____ is the multiplicative identity for rational numbers.
   (a) 1 (b) 0 (c) – 1 (d) $\frac{1}{2}$

4. The additive inverse of $\frac{7}{5}$ is
   (a) 1 (b) 0 (c) $-\frac{7}{5}$ (d) $\frac{7}{5}$

5. Zero has _____ reciprocal.
   (a) 1 (b) 2 (c) 3 (d) no

6. The numbers _____ and _____ are their own reciprocals
   (a) 1 and 0 (b) 1 and –1 (c) –1 and 0 (d) none of these.

7. The reciprocal of – 5 is _____.
   (a) 5 (b) 1 (c) $-\frac{1}{5}$ (d) $\frac{1}{5}$

8. Reciprocal of $\frac{1}{x}$, where $x \neq 0$ is _____.
   (a) 1 (b) x (c) 0 (d) none of these

9. The product of two rational numbers is always a _____.
   (a) whole numbers (b) integers (c) natural numbers (d) rational numbers

10. Simplify: $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left(\frac{-14}{9}\right)$
    (a) 1 (b) 0 (c) 2 (d) $\frac{1}{2}$

**11.** The sum of the rational numbers $\frac{-5}{16}$ and $\frac{7}{12}$ is

(a) $\frac{-7}{48}$ (b) $\frac{-11}{30}$ (c) $\frac{13}{48}$ (d) $\frac{1}{3}$

**12.** What number should be added to $\frac{7}{12}$ to get $\frac{4}{15}$ ?

(a) $-\frac{19}{60}$ (b) $-\frac{11}{30}$ (c) $\frac{51}{60}$ (d) $\frac{1}{20}$

**Solve**

**1.** Find $\frac{3}{7}+\left(\frac{-6}{11}\right)+\left(\frac{-8}{21}\right)+\frac{5}{22}$

**2.** Find $\frac{-4}{5}\times\frac{3}{7}\times\frac{15}{16}\times\left(\frac{-14}{9}\right)$

**3.** Find using distributive property: $(i)\left\{\frac{7}{5}\times\left(\frac{-3}{12}\right)\right\}+\left\{\frac{7}{5}\times\frac{5}{12}\right\}$ $(ii)\left\{\frac{9}{16}\times\frac{4}{12}\right\}+\left\{\frac{9}{16}\times\frac{-3}{9}\right\}$

**4.** Find $\frac{2}{5}\times\frac{-3}{7}-\frac{1}{14}-\frac{3}{7}\times\frac{3}{5}$

**5.** Simplify: $\frac{-4}{5}\times\frac{3}{7}\times\frac{15}{16}\times\left(\frac{-14}{9}\right)$

**6.** Multiply $\frac{6}{13}$ by the reciprocal of $\frac{-7}{16}$.

**7.** What number should be added to $\frac{7}{12}$ to get $\frac{4}{15}$ ?

**8.** What number should be subtracted from $-\frac{3}{5}$ to get –2?

**9.** Is $\frac{8}{9}$ the multiplicative reciprocal of $-1\frac{1}{8}$? Why or why not?

**10.** Is 0.3 the multiplicative reciprocal of $3\frac{1}{3}$? Why or why not?

**11.** Write any 3 rational numbers between –2 and 0.

**12.** Find any ten rational numbers between $\frac{-5}{6}$ *and* $\frac{5}{8}$

**13.** Find three rational numbers between $\frac{1}{4}$ *and* $\frac{1}{2}$

**14.** Find ten rational numbers between $\frac{1}{4}$ *and* $\frac{1}{2}$

**15.** Represent these numbers on the number line. $(i)\frac{7}{4}$ $(ii)\frac{-5}{6}$ $(iii)\frac{4}{7}$ $(iv)\frac{9}{4}$

**Chapter 2 Linear equations in one variable**
**MCQ**

1. The solution of $2x - 3 = 7$ is
   (a) 2 (b) –2 (c) 5 (d) –5

2. Which of the following is not a linear equation
   (a) $2x + 5 = 1$ (b) $x - 1 = 0$ (c) $y + 1 = 0$ (d) $5x + 3$

3. Solve $2y + 9 = 4$
   (a) 2 (b) –2 (c) 5 (d) none of these

4. Solve : $\frac{x}{3}+\frac{5}{2}=\frac{-3}{2}$
   (a) 12 (b) –12 (c) 15 (d) none of these

5. Solve: $\frac{15}{4}-7x=9$
   (a) $\frac{3}{4}$ (b) $-\frac{3}{4}$ (c) 1 (d) none of these

6. Solve: $x - 2 = 7$
   (a) 5 (b) –9 (c) 5 (d) 9

7. Solve: $y + 3 = 10$
   (a) 7 (b) –7 (c) 13 (d) –13

8. Solve: $6 = z + 2$
   (a) 4 (b) –4 (c) 8 (d) –8

9. Solve: $6x = 12$
   (a) 2 (b) –2 (c) 3 (d) none of these

10. Solve: $\frac{x}{5}=10$
    (a) 15 (b) 50 (c) –50 (d) none of these

**Solve**

1. Find the solution of $\frac{3x+5}{2x+1}=\frac{1}{3}$
2. Find the solution of $\frac{x+6}{4}+\frac{x-3}{5}=\frac{5x-4}{8}$
3. Solve: $\frac{x}{4}+\frac{x}{6}=x-7$
4. Solve: $\frac{2}{3}x+1=\frac{7}{3}$
5. Solve: $\frac{x}{3}+\frac{5}{2}=\frac{-3}{2}$

**6.** Solve: $\frac{15}{4}-7x=9$

**7.** Solve: $x=\frac{4}{5}(x+10)$

**8.** Solve: $\frac{2x}{3}+1=\frac{7x}{15}+3$

**9.** Solve: $2y+\frac{5}{3}=\frac{26}{3}-y$

**10.** Solve: $3m-5m-\frac{8}{5}$

**11.** Solve: $5x+\frac{7}{2}=\frac{3}{2}x-14$

**12.** The perimeter of a rectangular swimming pool is 154 m. Its length is 2 m more than twice its breadth. What are the length and the breadth of the pool?

**13.** The base of an isosceles triangle is $\frac{4}{3}$ cm. The perimeter of the triangle is $4\frac{2}{15}$ cm. What is the length of either of the remaining equal sides?

**14.** Sum of two numbers is 95. If one exceeds the other by 15, find the numbers.

**15.** Two numbers are in the ratio 5:3. If they differ by 18, what are the numbers?

## Chapter 3 Understanding Quadrilaterals
## MCQ

**1.** A simple closed curve made up of only _____ is called a polygon .
(a) curves (b) line segments (c) lines (d) closed curves

**2.** A polygon with minimum number of sides is
(a) Pentagon (b) Square (c) triangle (d) angle

**3.** Polygons that have no portions of their diagonals in their exteriors are called
(a) Squares (b) triangles (c) convex (d) concave

**4.** Polygons that have any portions of their diagonals in their exteriors are called
(a) Squares (b) triangles (c) convex (d) concave

**5.** All the sides of a regular polygon are _____.
(a) Parallel (b) equal in length (c) not parallel (d) not equal

**6.** All the angles of a regular polygon are of _____.
(a) $90^\circ$ (b) $60^\circ$ (c) equal measure (d) equal length

**7.** Sum of all interior angles of a polygon with (n) sides is given by
(a) $(n-2)\times 180^\circ$ (b) $n-2\times 180^\circ$ (c) $(n+2)\times 180^\circ$ (d) $n+2\times 180^\circ$

**8.** Maximum number of right angles in a right angled triangle are
(a) 2 (b) 1 (c) 3 (d) 0

**9.** Sum of all interior angles of a parallelogram is
(a) $180^\circ$ (b) $360^\circ$ (c) $540^\circ$ (d) $240^\circ$

**10.** The angle sum of all interior angles of a convex polygon of sides 7 is
(a) $180^\circ$ (b) $540^\circ$ (c) $630^\circ$ (d) $900^\circ$

**11.** Each exterior angle of a regular hexagon is of measure
(a) $120^\circ$ (b) $80^\circ$ (c) $100^\circ$ (d) $60^\circ$

**12.** The number of sides in a regular polygon is 15 , then measure of each exterior angle is
(a) $24^\circ$ (b) $36^\circ$ (c) $20^\circ$ (d) $18^\circ$

**13.** How many diagonals does have in a convex quadrilateral?
(a) 2 (b) 1 (c) 3 (d) none of these

**14.** How many diagonals does have in a regular hexagon?
(a) 2 (b) 1 (c) 3 (d) none of these

**15.** How many diagonals does have in a traingle?
(a) 2 (b) 1 (c) 0 (d) none of these

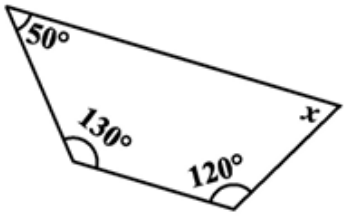
**Solve**

**1.** How many diagonals does each of the following have?
(a) A convex quadrilateral (b) A regular hexagon (c) A triangle

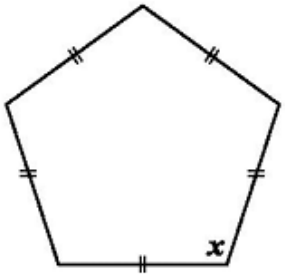
**2.** What is the sum of the measures of the angles of a convex quadrilateral? Will this property hold if the quadrilateral is not convex? (Make a non-convex quadrilateral and try!)

**3.** What is a regular polygon? State the name of a regular polygon of (i) 3 sides (ii) 4 sides (iii) 6 sides

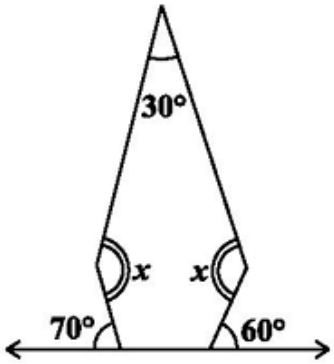
**4.** Find the angle measure $x$ in the figures.



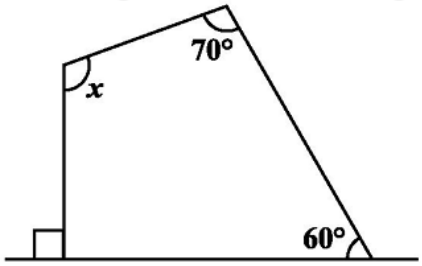

**5.** Find the angle measure $x$ in the figures.



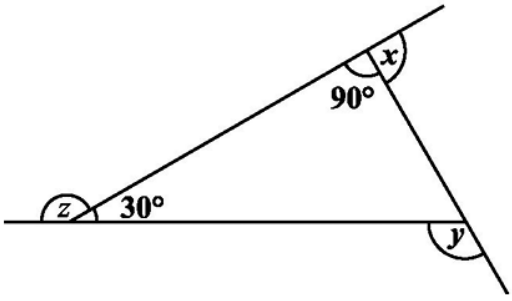

**6.** Find the angle measure $x$ in the figures.




**7.** Find the angle measure $x$ in the figures.

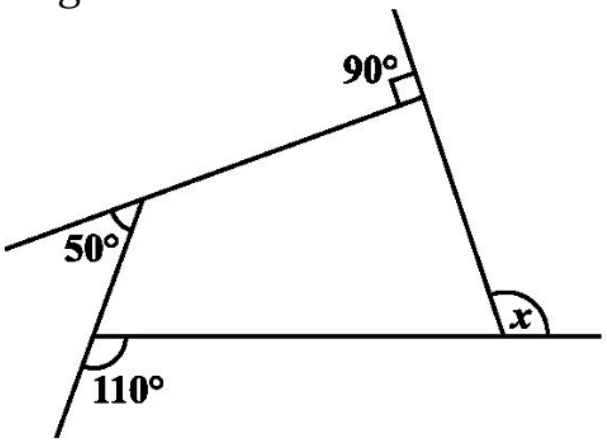



**8.** Find the angle measure $x$ in the figures.



**9.Find the number of sides of a regular polygon whose each interior angle has a measure $15^0$**

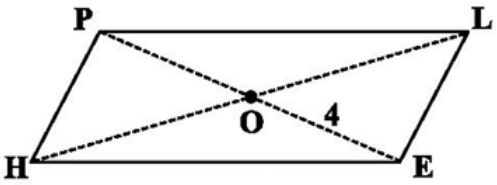
**10.** Find the angle measure x in the figure:




**11.In a parallelogram RING , ∠R=$70^0$, find all other angles**

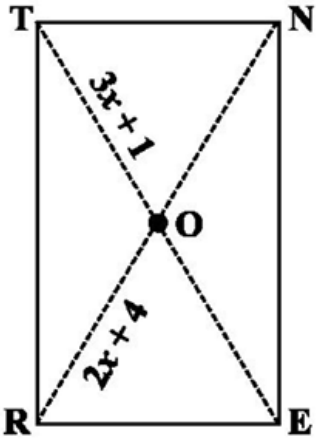
12.

In Fig HELP is a parallelogram. (Lengths are in cms). Given that OE = 4 and HL is 5 more than PE? Find OH.



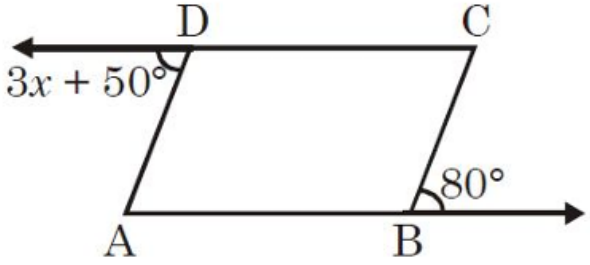

13.

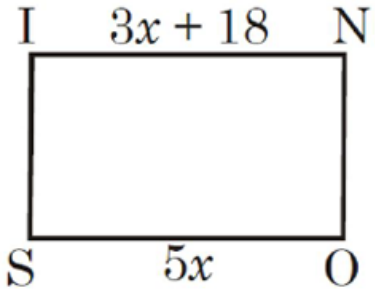
RENT is a rectangle. Its diagonals meet at O. Find $x$, if OR = $2x + 4$ and OT = $3x + 1$.



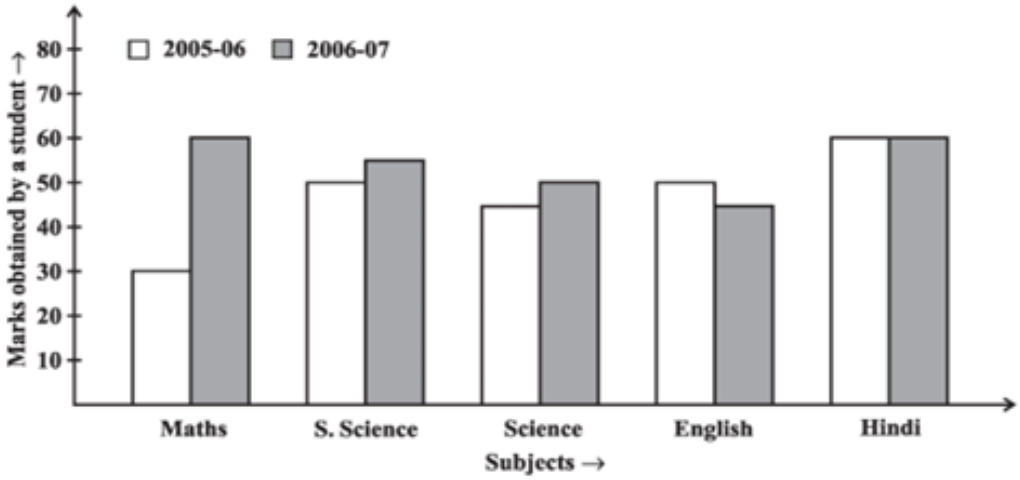

14.

In the below figure, *ABCD* is a parallelogram. What is the value of $x$?



Following bar graph shows marks obtained by a student in 2005–06 and 2006–07 subject wise. Read and answer the questions from Q1 – Q10




**1.** In which subject has the performance improved the most?
(a) Maths (b) Science (c) S. Science (d) none of these

**2.** In which subject has the performance deteriorated?
(a) English (b) Science (c) S. Science (d) none of these

**3.** In which subject is the performance at par?
(a) Hindi (b) Science (c) S. Science (d) none of these

**4.** Find the marks obtained in Maths by a student in 2005–06 ?
(a) 30 (b) 40 (c) 50 (d) 60

**5.** Find the marks obtained in Maths by a student in 2006–07 ?
(a) 30 (b) 40 (c) 50 (d) 60

**6.** Find the marks obtained in Hindi by a student in 2005–06 ?
(a) 30 (b) 40 (c) 50 (d) 60

**7.** Find the marks obtained in Hindi by a student in 2006–07 ?
(a) 30 (b) 40 (c) 50 (d) 60

**8.** Find the marks obtained in S. Science by a student in 2005–06 ?
(a) 30 (b) 40 (c) 50 (d) 60

**9.** Find the total marks obtained by a student in 2005–06?
(a) 230 (b) 235 (c) 240 (d) none of these

**10.** Find the total marks obtained by a student in 2006–07?
(a) 230 (b) 270 (c) 240 (d) none of these

Cards are marked with numbers 1 to 25 are placed in the box and mixed thoroughly. One card is drawn at random from the box. Answer the following questions (Q1-Q10)

**1.** What is the probability of getting a number 5?

(a) 1 (b) 0 (c) $\frac{1}{25}$ (d) $\frac{1}{5}$

**2.** What is the probability of getting a number less than 11?

(a) 1 (b) 0 (c) $\frac{1}{5}$ (d) $\frac{2}{5}$

**3.** What is the probability of getting a number greater than 25?

(a) 1 (b) 0 (c) $\frac{1}{5}$ (d) $\frac{2}{5}$

**4.** What is the probability of getting a multiple of 5?

(a) 1 (b) 0 (c) $\frac{1}{25}$ (d) $\frac{1}{5}$

**5.** What is the probability of getting an even number?

(a) 1 (b) 0 (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

**6.** What is the probability of getting an odd number?

(a) 1 (b) 0 (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

**7.** What is the probability of getting a prime number?

(a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

**8.** What is the probability of getting a number divisible by 3?

(a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{12}{25}$ (d) $\frac{13}{25}$

**9.** What is the probability of getting a number divisible by 4?

(a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{6}{25}$ (d) $\frac{3}{25}$

**10.** What is the probability of getting a number divisible by 7?

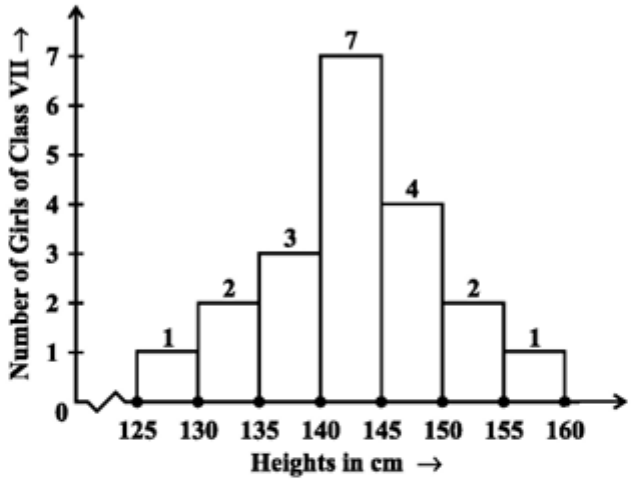
(a) $\frac{8}{25}$ (b) $\frac{9}{25}$ (c) $\frac{6}{25}$ (d) $\frac{3}{25}$

**Solve**

1. A group of students were asked to say which animal they would like most to have as a pet. The results are given below:
   dog, cat, cat, fish, cat, rabbit, dog, cat, rabbit, dog, cat, dog, dog, dog, cat, cow,
   fish, rabbit, dog, cat, dog, cat, cat, dog, rabbit, cat, fish, dog.
   Make a frequency distribution table for the same.

2. Construct a frequency distribution table for the data on weights (in kg) of 20 students of a class using intervals 30-35, 35-40 and so on.
   40, 38, 33, 48, 60, 53, 31, 46, 34, 36, 49, 41, 55, 49, 65, 42, 44, 47, 38, 39.

3. Observe the histogram and answer the questions given below.



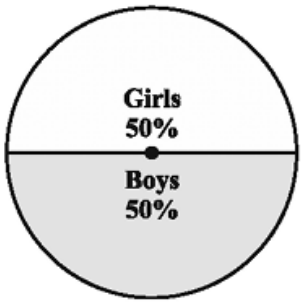

   (i) What information is being given by the histogram?
   (ii) Which group contains maximum girls?
   (iii) How many girls have a height of 145 cms and more?
   (iv) If we divide the girls into the following three categories, how many would there be in each?
      150 cm and more — Group A
      140 cm to less than 150 cm — Group B
      Less than 140 cm — Group C

4. The shoppers who come to a departmental store are marked as: man (M), woman (W), boy (B) or girl (G). The following list gives the shoppers who came during the first hour in the morning:
   W W W G B W W M G G M M W W W W G B M W B G G M W W M M W W
   W M W B W G M W W W W G W M M W W M W G W M G W M M B G G W
   Make a frequency distribution table using tally marks. Draw a bar graph to illustrate it.

5. The weekly wages (in Rs) of 30 workers in a factory are.
   830, 835, 890, 810, 835, 836, 869, 845, 898, 890, 820, 860, 832, 833, 855, 845,
   804, 808, 812, 840, 885, 835, 835, 836, 878, 840, 868, 890, 806, 840
   Using tally marks make a frequency table with intervals as 800–810, 810–820 and so on. Draw a histogram for the frequency table and answer the following questions.
   (i) Which group has the maximum number of workers?
   (ii) How many workers earn Rs 850 and more?
   (iii) How many workers earn less than Rs 850?

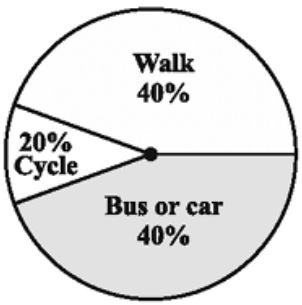
**6.** Each of the following pie charts gives you a different piece of information about your class. Find the fraction of the circle representing each of these information.

(i)



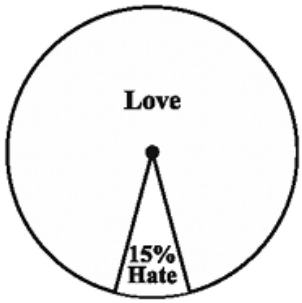

**Girls or Boys**

(ii)




**Transport to school**

(iii)



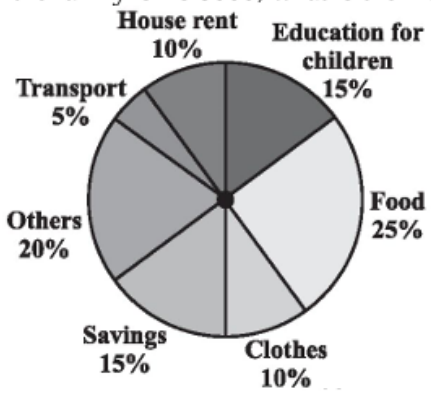

**Love/Hate Mathematics**

**7.** Below pie chart gives the expenditure (in percentage) on various items and savings of a family during a month.

(i) On which item, the expenditure was maximum?

(ii) Expenditure on which item is equal to the total savings of the family?

(iii) If the monthly savings of the family is Rs 3000, what is the monthly expenditure on clothes?




**8.** On a particular day, the sales (in rupees) of different items of a baker's shop are given below. Draw a pie chart for this data.

| | |
|---|---|
| ordinary bread | : 320 |
| fruit bread | : 80 |
| cakes and pastries | : 160 |
| biscuits | : 120 |
| others | : 40 |
| **Total** | **: 720** |

**9.** Draw a pie chart of the data given below. The time spent by a child during a day.

| | | |
|---|---|---|
| Sleep | — | 8 hours |
| School | — | 6 hours |
| Home work | — | 4 hours |
| Play | — | 4 hours |
| Others | — | 2 hours |

| Season | No. of votes |
|---|---|
| Summer | 90 |
| Rainy | 120 |
| Winter | 150 |

**10.** A group of 360 people were asked to vote for their favourite season from the three seasons rainy, winter and summer(shown in above fig.). (i) Which season got the most votes? (ii) Find the central angle of each sector. (iii) Draw a pie chart to show this information.

**11.** The number of students in a hostel, speaking different languages is given below. Display the data in a pie chart.

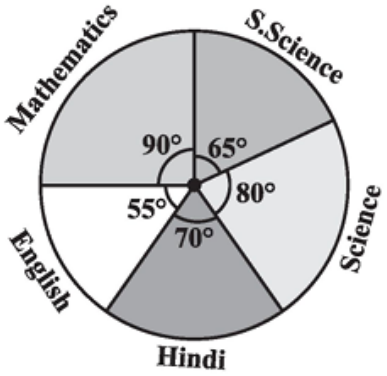
| **Language** | Hindi | English | Marathi | Tamil | Bengali | Total |
|---|---|---|---|---|---|---|
| **No. of Students** | 40 | 12 | 9 | 7 | 4 | 72 |

**12.** The adjoining pie chart gives the marks scored in an examination by a student in Hindi, English, Mathematics, Social Science and Science. If the total marks obtained by the students were 540, answer the following questions.

(i) In which subject did the student score 105 marks?

(ii) How many more marks were obtained by the student in Mathematics than in Hindi?

(iii) Examine whether the sum of the marks obtained in Social Science and Mathematics is more than that in Science and Hindi.




**13.** A box contains 3 blue, 2 white, and 4 red marbles. If a marble is drawn at *random* from the box, what is the probability that it will be (i) white? (ii) blue? (iii) red?

**14.** A die is thrown once. Find the probability of getting (i) a prime number; (ii) a number lying between 2 and 6; (iii) an odd number.

**15.** A bag contains 3 red balls and 5 black balls. A ball is drawn at random from the bag. What is the probability that the ball drawn is (i) red ? (ii) not red?

## Squares and square roots and cube and cube roots

**1.** Which is the smallest three-digit perfect square?

(a) 100 (b) 101 (c) 121 (d) 144

**2.** Which is the greatest three-digit perfect square?

(a) 999 (b) 961 (c) 962 (d) 970

**3.** Which is the greatest 4-digit perfect square?

(a) 9999 (b) 9990 (c) 9800 (d) 9801

**4.** Which is the smallest 4-digit perfect square?

(a) 1024 (b) 1025 (c) 1000 (d) 1016

**5.** What will be the number of digits in the square root of 25600?

(a) 3 (b) 2 (c) 5 (d) 4

**6.** What will be the number of digits in the square root of 1296?

(a) 2 (b) 3 (c) 1 (d) 4

**7.** The square root of 12.25 is _____ .

(a) 3.5 (b) 2.5 (c) 35 (d) 25

**8.** What is the length of the side of a square whose area is 441 $cm^2$ ?

(a) 21 (b) 22 (c) 20 (d) 12

**9.** What will be the " one's digit" in the square of 1234 ?

( a ) 6 ( b) 2 ( c ) 8 ( d ) 9

**10.** What will be the number of zeros in the square of 400 ?

( a) 5 ( b) 1 ( c ) 3 ( d ) 4

**11.** The perfect square number between 30 and 40 is :

( a) 35 ( b ) 39 ( c ) 36 ( d ) 32

**12.** Which of the following number would have digit 6 at units place ?

( a ) $19^2$ ( b ) $24^2$ ( c) $25^2$ ( d) $13^2$

**13.** Which of the following number would have digit 5 at units place :

( a ) $95^2$ ( b) $59^2$ ( c ) $24^2$ (d) $42^2$

**14.** Which of the following number would have digit 1 at units place ?

( a ) $81^2$ ( b ) $18^2$ ( c ) $54^2$ ( d ) $95^2$

**15.** How many natural numbers lie between $9^2$ and $10^2$?

(a) 15 (b) 19 (c) 18 (d) 17

**Solve**

1. **Find the greatest 4-digit number that is a perfect square.**
2. **Determine the side length of a square whose area is 2304 $m^2$.**
3. **Using prime factorization, find the square root of 7056.**
4. **How many natural numbers lie between $N^2$ and $(N+1)^2$?**
   ***Give your answer in terms of N.***
5. **Use the identity $(n+1)^2 - n^2 = 2n + 1$ to compute: $118^2 - 117^2$.**
6. **Express 49 as the sum of 7 odd numbers.**
7. **By what number should 2800 be divided to obtain a perfect square**
8. **If 1521 students each contributed as many rupees as there were students in the class, how many students are there?**
9. **By what number should 125 be multiplied to obtain a perfect square**
10. **Do the prime factorisation of 7084**

**Cubes and cube roots**
**MCQ**

**1.** Which is the smallest three-digit perfect cube?
(a) 125 (b) 343 (c) 729 (d) 512

**2.** Which is the greatest three-digit perfect cube?
(a) 125 (b) 343 (c) 729 (d) 512

**3.** Which of the following is not a perfect cube ?
(a) 1 (b) 9 (c) 8 (d) 27

**4.** The cube of 4 is _____ .
(a) 12 (b) 8 (c) 4 (d) 64

**5.** The value of $5^3$ is _____ .
(a) 125 (b) 15 (c) 10 (d) 75

**6.** The cube of an even number is always _____ .
(a) odd number (b) even number (c) prime number (d) none of these

**7.** The cube of an odd number is always _____ .
(a) odd number (b) even number (c) prime number (d) none of these

**8.** Each prime factor appears _____ times in its cube?
(a) 2 (b) 3 (c) 1 (d) 4

**9.** Which of the following is Hardy-Ramanujan Number ?
(a) 1724 (b)1725 (c) 1727 (d) 1729

**10.** By which smallest natural number 392 must be multiplied so as to make the product a perfect cube ?
(a) 2 (b) 14 (c) 7 (d) 49

**11.** The smallest natural number by which 243 must be multiplied to make the product a perfect cube is _____ .
(a) 3 (b) 9 (c) 8 (d) 7

**12.** The smallest natural number by which 704 must be divided to obtain a perfect cube is
(a) 22 (b) 12 (c) 11 (d) 13

**13.** If the volume of a cube is 125 cm3 then what would be the length of its side?
(a) 25 (b) 5 (c) 4 (d) 15

**14.** What will be the unit digit of the cube root of a number ends with 8?
(a) 2 (b) 8 (c) 4 (d) 6

**15.** What will be the unit digit of the cube root of a number ends with 2?
(a) 2 (b) 8 (c) 4 (d) 6

**Solve**

1. Find the one's digit of the cube of each of the following numbers.
   (i) 3331 (ii) 8888 (iii) 149 (iv) 1005 (v) 1024 (vi) 77 (vii) 5022 (viii) 53
2. Express the following numbers as the sum of odd numbers using the pattern?
   (a) $6^3$ (b) $8^3$ (c) $7^3$
3. Which of the following are perfect cubes?
   1. 400 2. 3375 3. 8000 4. 15625 5. 9000 6. 6859
4. Is 392 a perfect cube? If not, find the smallest natural number by which 392 must be multiplied so that the product is a perfect cube.
5. Is 53240 a perfect cube? If not, then by which smallest natural number should 53240 be divided so that the quotient is a perfect cube?
6. Is 1188 a perfect cube? If not, by which smallest natural number should 1188 be divided so that the quotient is a perfect cube?
7. Is 68600 a perfect cube? If not, find the smallest number by which 68600 must be multiplied to get a perfect cube.
8. Check which of the following are perfect cubes.
   (i) 2700 (ii) 16000 (iii) 64000 (iv) 900 (v) 125000 (vi) 36000 (vii) 21600 (viii) 10,000
9. Find the smallest number by which 256 must be multiplied to obtain a perfect cube.
10. Find the smallest number by which 192 must be divided to obtain a perfect cube.
11. Parikshit makes a cuboid of plasticine of sides 5 cm, 2 cm, 5 cm. How many such cuboids will he need to form a cube?
12. Find the cube root of 8000.
13. Find the cube root of 13824 by prime factorisation method.
14. Find the cube root of 17576 through estimation.
15. You are told that 1,331 is a perfect cube. Can you guess without factorisation what is its cube root? Similarly, guess the cube roots of 4913, 12167, 32768.