HOLIDAY HOMEWORK

SUMMER VACATION

CLASS- VI (2023-24)

Q.1. Learn and write (two times) the multiplication tables from 2 to 20.

Q.2. Population of a town was 4, 95,000 in the year 2022.In the year 2023 it was to be decreased

by 72,958. What was the population of that town in 2020?

Q.3. Insert commas suitably & write the number name of i) 16573449 ii) 287651009 according

to Indian system of numeration.

Q.4. Raju had Rs.6980/- with him .He bought a fan for Rs.1900/- and a music system for Rs.3080/-

.Find the amount that is left with Raju.

Q.5. Insert commas suitably & write the number name of i) 54851455 ii) 36849895 according

to International system of numeration.

Q.6. Smallest whole number is _____.

Q.7. Smallest natural number is _____.

Q.8. Smallest prime number is _____.

Q.9. Smallest composite number is _____.

Q.10. Write all the prime numbers upto 100.

Q.11. How many prime numbers are there which are less than 100?

Q.12. The successor of 999 is_____.

Q.13. If a number is divisible by 2 then it is called _____ number.

Q.14. Check if the following numbers are divisible by 2 or not.

   (a) 45872   (b) 6954789   (c) 584730   (d) 5485625

Q.15. Check if the following numbers are divisible by 3 or not.

   (a) 5334   (b) 97002   (c) 458776 (d) 888

Q.16. Check if the following numbers are divisible by 4 or not.

   (a) 153624   (b) 45800   (c) 458723   (d) 78472

Q.16. Check if the following numbers are divisible by 11 or not.

   (a) 535634   (b) 7895442   (c) 8684016   (d) 485564

Q.17. Write all the factors of the given numbers

   (a) 52   (b) 37   (c) 124   (d) 57

Q.18. Write the common factors of the pairs of numbers

   (a) 24 & 32   (b) 84 & 72 (c) 17 & 23

Q.19. Write first five common multiple of the numbers

   (a) 8 & 6   (b) 7 & 11   (c) 12 & 9

Q.20. Write the prime factorisation of the numbers using factor tree method:

a) 45   b) 36   c) 108   d) 320

Q.21. write true or false

(a) Factors of a number are finite.

(b) Multiples of a number are finite.

(c) Even numbers are always composite.

(d) 1 is a prime number.

(e) 2 and 3 are twin primes.

**END**

CLASS - VII.   **SUBJECT- MATHS**

1. If a girl is 16 years old how will her age be written using Roman numeral.

2. Captain is going on a road trip. He travels 324 miles and then another 252 miles before arriving back home. How far was his trip?

3. Divide 2458468 by 8.

4. Find the least length of a rope which can be cut into whole number of pieces of length 45 cm ,75 cm,81 cm .

5. Simplify 78/169 .

6. Convert 3216 kg into grams .

7. 12 + t = 32 . Find the value of t .

8. Reduce 56:112 to simplest form.

9 . Draw a line of symmetry for the figure :

.
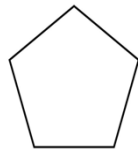
1O.   **Write the faces , edges and the vertices of the given figure .**
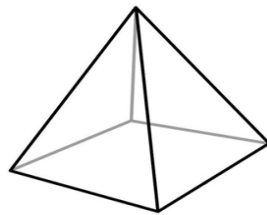
11. Write the number of lines , line segments and rays in the given figure .
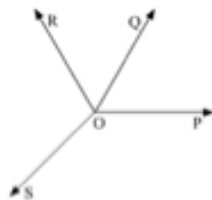
12.   **Two**   **hundred students of class 6 and 7 were asked to name their favourite colours . Draw the bar graph for the given table**

Colours	Red	Green	Blue	Yellow	Orange
No.of students	43	19	55	49	34

13.Write in expression

(I) the sum of 5 and n divided by 7

(II) 5 more than twice a number

14. Vinita has read 5/6 of his new book . The book has 420 pages .How many pages did she read ?

15.Add integers using number line

(I) -6 + 3

(II) -6 + (-3)

16. Sweetheart runs around a square park of side 75m. Bulbul runs around a rectangular park with length of 60m and breadth of 45m. Who covers less distance.

17. Find H.C.F of 98 and 112 using prime factorisation method, and find all factors of 48.

18.Solve the puzzle

Solve the equation and fill in the missing puzzle.

19. Learn the tables from 12 to 30.

20. Learn the squares of numbers from 2 to 30

21. Find the LCM of 24,14,11.

22. Find the LCM of 158,200

23. Find the HCF of i) 158,200. II)64,48,16.   iii) 850,680. By prime factorisation method.

24. If the area of rectangular plot is 180 sq.m and it's length is 15m,then its breadth.

25. The perimeter of a square is 36cm then it's area.

26. Divide 674058 by 12, divide 700053 by 15, divide 830305 by 22.

27. Simply 35/55, 112/72, 102/255, 114/304.

28. Convert I) 28.554. =. ————g

II) 24g =. ————kg

Iii) 0.12 L =———— ml

Iv) 6.009 km=————-m

V) 15699 g =————kg

Vi) 22.252 km = ————————m

29. Write the divisiblity rules of 2,3,4,5,6,8,9,10,11

30. Check the divisiblity rules for given numbers

I. 345765 is divisible by 3?

II. 32189754 is divisible by 4?

Iii. 1786456898 is divisible by 9?

Iv. 564789 is divisible by 11?

V. 3489654667is divisible by 6?

KENDRIYA VIDYALAYA NO. 2, AFS KALAIKUNDA
Holiday Homework

CLASS – VIII   **SUBJECT – MATHS**

Q.No.   **Section A**

1.   Express 12/18   as decimal.

2.   **Subtract 56789.23 from 67898.35**

3.   **Write the value 52.5 ÷ 10 .**

4.   **What is the measure of the supplementary of angle 100° .**

5.   **Find the mode of the data 2 , 3 , 5 , 2 , 2 ,1 , 1 ,6 ,7   .**

       6.   Write the coefficient of x in expression 56y² + 28 x +99 .
7.   **The sum of 3 times y and 12 is 27 . Write the equation for the statement.**
8.   **Find the ratio of 5 m to 10 km .**
9.   **Write the angle sum property of quadrilateral.**
10.   **Add the fractions 12/5+24/7,   32/3+75/5**

11.   **Find the mean of first five odd natural numbers.**

12.   **Solve 10p + 10 = 100 .**

13.   **Disha baked 6 cupcakes for her sisters and two cupcakes for each of
           her friend . Suppose Nina has x friends . How many cupcakes did she
           bake in all.**

14.   **Find the median of the given 7 natural numbers
           6 , 8 , 4, 2 , 5 , 11 , 7   .**
15.   **Line l and m are parallel, t is the transversal . Find the value of**
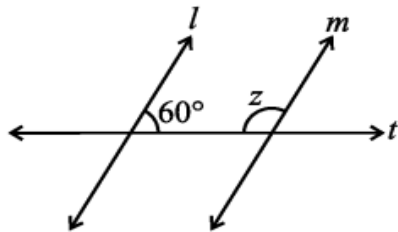
Section - C

16.   The enrolment in classes VI to X of a school is given below:

Class	VI	VII	VIII	IX	X
Enrolment	70	65	60	45	35

Draw the bar graph.

17.   A shopkeeper bought a chair for Rs 375 and sold it for Rs 400 . Find the gain percentage.

18.   There are 25 radios , 16 of them are out of order . What percentage of radios are out of order.

19. write the value of i) 898/100.   II) 431/1000. iii) 40.7/10   4) 29.56/3. 5) 33.24/20

20. Divide 0.32 by 0.1, divide 86.5 by 7.2, divide 9/8.7

21. I) one sixth of X added to X to get 26.

   II) six times a number added to 25 gives 49.

Iii) 5 more than one third of Y.

Iv) the sum of X,y,z divided by three times the sum of x and y is?

V) solve 1/3X + 8 =1
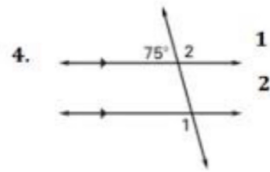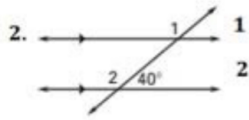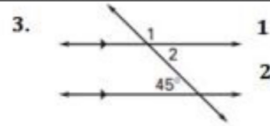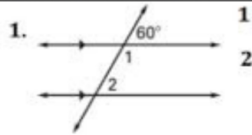
22. I) find the value of a when a=3. a(1+1/a)

  II) solve 2/21x + 8 =X + 6.

 Iii) add. 4a+5b and a+6B+c.
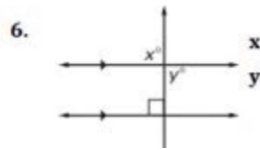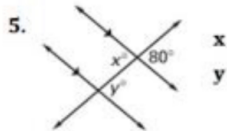
 Iv) subtract X+y from 3/2x - 5/2y.

 V) if z = 3 find the value of 2 - 3 (4 - z).

23. Find the values of angles in the given figures.

1.

2.

3.

4.

Find the values of x and y.

5.

6.

24.

- Sia bought flour bag rupees 500 per bag. Due to spoilage, she had to sold them for rupees 450 per bag. Find the gain or loss percent.

- Mr. Anurag bought a freeze for rupees 15,000 and sold it for rupees 16,500. Find his profit or loss percent.

Q.1. Saif purchased 20 dozens of toys at the rate of Rs. 375 per dozen. He sold each one at the rate of Rs. 33. What was his percentage profit ?
(1) 3.5 %   (2) .5%   (3) 5.6%   (4) 6.5%   (5) None of these

Q.2. 100 oranges are bought at the rate of Rs. 350 and sold at the rate of Rs. 48 per dozen. The percentage of profit or loss is :

(1) $14\frac{2}{7}$ % gain   (2) 15% gain   (3) $14\frac{2}{7}$ %loss   (4) 15% loss   (5) None of these

Q.3. A man buys a cycle for Rs. 1400 and sells it at a loss of 15%. What is the selling price of the cycle?
(1) Rs. 1090   (2) Rs. 1160   (3) Rs. 1190   (4) Rs. 1202   (5) None of these

25. Read the tables from 12 to 30 and squares 2 to 40.

Solve the following Questions.

1)

Which of the following is not a polynomial?

(a) $x^2 + \sqrt{2}x + 3$ (b) $x^2 + \sqrt{2x} + 6$ (c) $x^3 + 3x^2 - 3$ ___   (d) $6x + 4$

2) **Rationalise the following denominator.**

(i) $\dfrac{2}{\sqrt{3}-\sqrt{5}}$ (ii) $\dfrac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$ (iii) $\dfrac{6}{\sqrt{5}+\sqrt{2}}$ (iv) $\dfrac{1}{8+5\sqrt{2}}$

Express the following in the form of $\dfrac{p}{q}$, where p and q are integers and $q \neq 0$.

(i) $0.\overline{6}$ (ii) $0.4\overline{7}$ (iii) $0.\overline{001}$ (iv) $0.2\overline{6}$

Which are the zeroes of $p(x) = x^2 - 1$:

(a) 1, –1   (b) – 1, 2   (c) –2, 2   (d) –3, 3

5)

Which one of the following is not a rational number:

(a) $\sqrt{2}$ (b) 0   (c) $\sqrt{4}$ (d) $\sqrt{-16}$

6)

Which one of the following is an irrational number:

(a) $\sqrt{4}$ (b) $3\sqrt{8}$ (c) $\sqrt{100}$ (d) $-\sqrt{0.64}$

7) solve

(a) $\dfrac{2}{3} + \dfrac{1}{7}$ (b) $\dfrac{3}{10} + \dfrac{7}{15}$ c) $\dfrac{2}{3} + \dfrac{3}{4} + \dfrac{1}{2}$

d) $\dfrac{3}{4} - \dfrac{1}{3}$ e) $\dfrac{16}{5} - \dfrac{7}{5}$ f) $\dfrac{4}{3} - \dfrac{1}{2}$

8) **Simplify :**

$(256)^{(-4^{\frac{-3}{2}})}$

Find the zero of the polynomial in each of the following cases:
   (i) $p(x) = x + 5$ (ii) $p(x) = x - 5$ (iii) $p(x) = 2x + 5$
   (iv) $p(x) = 3x - 2$ (v) $p(x) = 3x$ (vi) $p(x) = ax$, $a \neq 0$

Find the value of a if $x + 6$ is a factor of $x^3 + 3x^2 + 4x + a$.

Find three different irrational numbers between the rational numbers $\dfrac{5}{7}$ and $\dfrac{9}{11}$.

Check whether g(x) is a factor of p(x) or not, where $p(x) = 8x^3 - 6x^2 - 4x + 3$, $g(x) = \dfrac{x}{3} - \dfrac{1}{4}$.

Find the value of k, if $x - 1$ is a factor of $4x^3 + 3x^2 - 4x + k$.

Factorise :
(i) $x^2 + 9x + 18$ (ii) $6x^2 + 7x - 3$
(iii) $2x^2 - 7x - 15$ (iv) $84 - 2r - 2r^2$

Divide the polynomial $3x^4 - 4x^3 - 3x - 1$ by $x - 1$.

Simplify the following:
$(i)\left(4\sqrt{3} - 2\sqrt{2}\right)\left(3\sqrt{2} + 4\sqrt{3}\right)$

$(ii)\left(2 + \sqrt{3}\right)\left(3 + \sqrt{5}\right)$

$(iii)\left(\sqrt{3} + \sqrt{2}\right)^2$

$(iv)\left(\dfrac{2}{3}\sqrt{7} - \dfrac{1}{2}\sqrt{2} + 6\sqrt{11}\right) + \left(\dfrac{1}{3}\sqrt{7} + \dfrac{3}{2}\sqrt{2} - \sqrt{11}\right)$

Find five rational numbers between 4/5 and 7/5.

Represent the real number $\sqrt{5}$ on number line.

Do the following activities in Activity File.

   Square Root Spiral

Quadratic Polynomial

20)Do on A4 sheet .

i) Write and learn all the algebraic identities .

ii) Creative square root spiral drawing.

Activitry1: To verify that the relation R in the set L of all lines in a plane, defined by R = {(l, m) : l ⊥ m} is symmetric but neither reflexive nor transitive.

Activity 2: To demonstrate a function which is not one-one but is onto.

Activity 3: To explore the principal value of the function sin^{-1} (x) using a unit circle.

Activity 4: To verify that for a function f to be continuous at given point x_0 , Δ_y = |f $(x_0 + \Delta x) - f$ (x)|| is arbitrarily small provided. Δx is sufficiently small.

Activity 5: To understand the concepts of decreasing and increasing functions.

Activity 6: To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.

Activity 7: To understand the concepts of local maxima, local minima and point of inflection.

Activity 8: To verify geometrically that $\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times \vec{b}$.

QUESTIONS

Q.1. Show that the relation R on the set Z of all integers defined by (x, y) ∈ R ↔ (x – y) is

divisible by 3 is an equivalence relation.   [2018]

Q.2 Given A = $\begin{bmatrix} 5 & 0 & 4 \\ 2 & 3 & 2 \\ 1 & 2 & 1 \end{bmatrix}$, $B^{-1} = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$, compute $(AB)^{-1}$.   [2018]

Q.3. If for any 2 × 2 square matrix A, A(adj A)= $\begin{bmatrix} 8 & 0 \\ 0 & 8 \end{bmatrix}$, then write the value of |A|.   [2017]

Q.4. If A is a skew-symmetric matrix of order 3, then prove that det A = 0.   [2017]

Q.5. Find matrix A such that $\begin{bmatrix} 2 & -1 \\ 1 & 0 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -1 & -8 \\ 1 & -2 \\ 9 & 22 \end{bmatrix}$ [2017]

Q.6. Determine the product $\begin{bmatrix} -4 & 4 & 4 \\ -7 & 1 & 3 \\ 5 & -3 & -1 \end{bmatrix} \begin{bmatrix} 1 & -1 & 1 \\ 1 & -2 & -2 \\ 2 & 1 & 3 \end{bmatrix}$ and use it to solve the system of equations x – y + z = 4, x – 2y – 2z = 9, 2x + y + 3z = 1.   [2017]

Q.7. Consider f : **R** – {- $\frac{4}{3}$} → **R** – {$\frac{4}{3}$} given by f(x) = $\frac{4x+3}{3x+4}$. Show that f is bijective. Find the inverse of f and

hence find f^{-1}(0) and x such that f^{-1}(x) = 2.   [2017]

Q.8. Let A = {x ∈ Z : 0 ≤ x ≤12}. Show that R = {(a, b) : a, b ∈ A, |a – b| is divisible by 4} is an equivalence relation.

Find the set of all elements related to 1. Also write the equivalence class [2].   [2018]

Q.9. Show that the function **f** : **R→R,** defined by f(x) = $\frac{x}{x^2+1}$, ∀ x∈ **R** is neither one-one nor onto. Also, if g: **R→R**

Is defined as g(x) = 2x – 1, find fog(x).   [2018]

Q.10. If A = $\begin{bmatrix} 2 & -3 & 5 \\ 3 & 2 & -4 \\ 1 & 1 & -2 \end{bmatrix}$, find A^{-1}. Use it to solve the system of equations

2x – 3y + 5z = 11; 3x + 2y – 4z = – 5; x + y – 2z = – 3.   [2018]

Q.11. If the matrix $A = \begin{bmatrix} 0 & a & -3 \\ 2 & 0 & -1 \\ b & 1 & 0 \end{bmatrix}$, is skew symmetric, find the values of 'a' and 'b'. [2018]

Q.12. Given $A = \begin{bmatrix} 2 & -3 \\ -4 & 7 \end{bmatrix}$, compute A^{-1} and show that $2A^{-1} = 9I\text{-}A$.   [2018]