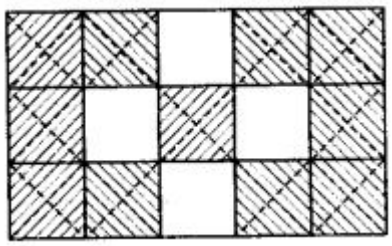
WINTER BREAK HOLIDAY HOMEWORK

KENDRIYA VIDYALAYA NO.4 ONGC

2023-24

CLASS VI MATHS



1. Write the fraction represented by the unshaded portion of the adjoining figure:

2. Ali divided one fruit cake equally among six persons. What part of the cake he gave to each person?

3. Mr. Rajan got a job at the age of 24 years and he got retired from the job at the age of 60 years. What fraction of his age till retirement was he in the job?

4. It was estimated that because of people switching to Metro trains, about 33000 tonnes of CNG, 3300 tonnes of diesel and 21000 tonnes of petrol was saved by the end of year 2007. Find the fraction of:
(i) the quantity of diesel saved to the quantity of petrol saved.
(ii) the quantity of diesel saved to the quantity of CNG saved.

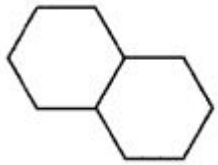
5. Following pictograph represents some surnames of people listed in the telephone directory of a city

Surname	Number of people	=100 people
Khan		
Patel		
Rao		
Roy		
Saikia		
Singh		

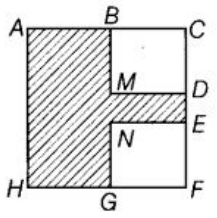
Observe the pictograph and answer the following questions:
(a) How many people have surname ‘Roy’?

(b) Which surname appears the maximum number of times in the telephone directory?
(c) Which surname appears the least number of times in the directory?
(d) Which two surnames appear an equal number of times?

6. Two regular hexagons of perimeter 30 cm each are joined as shown in figure. Find the perimeter of the new figure.

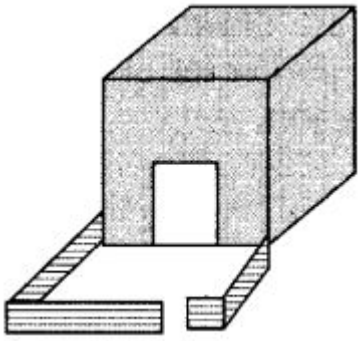


7. Perimeter of the shaded portion in the given figure is



AB + _ + _ + _ + _ + _ + _ + HA

8. There is a rectangular lawn 10 m long and 4 m wide in front of Meena's house (see figure). It is fenced along the two smaller sides and one longer side leaving a gap of 1 m for the entrance. Find the length of fencing.



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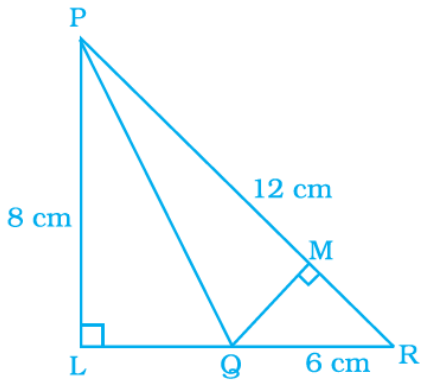
2023-24

CLASS VII MATHS

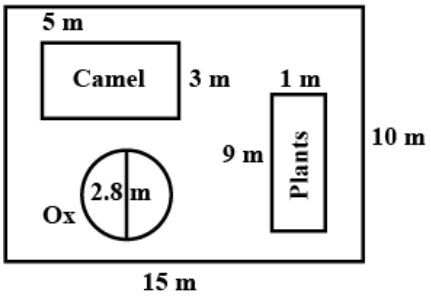
1. A rectangular piece of dimensions 3 cm × 2 cm was cut from a rectangular sheet of paper of dimensions 6 cm × 5 cm. Find the Area of remaining sheet of paper.

2. If PR = 12 cm, QR = 6 cm and PL = 8 cm, then QM is



3. Write the following statements in the form of algebraic expressions and write whether it is monomial, binomial or trinomial.
   (a) x is multiplied by itself and then added to the product of x and y.
   (b) Three times of p and two times of q are multiplied and then subtracted from r.
   (c) Sum of the products of a and b, b and c and c and a.
   (d) Perimeter of an equilateral triangle of side x.

4. People of Khejadli village take good care of plants, trees and animals. They say that plants and animals can survive without us, but we cannot survive without them. Inspired by her elders Amrita marked some land for her pets (camel and ox) and plants. Find the ratio of the areas kept for animals and plants to the living area.



5. The ratio of the radii of two circles is 3: 2. What is the ratio of their circumferences?
6. How long will John take to make a round of a circular field of radius 21 m cycling at the speed of 8 km/hr.?
7. Find the values of n in each of the following:
   (i) $5^{2n} \times 5^3 = 5^{11}$
   (ii) $9 \times 3^n = 3^7$
   (iii) $8 \times 2^{n+2} = 32$
   (iv) $7^{2n+1} \div 49 = 7^3$
8. Simplify and express each of the following in exponential form:
   (i) $\{(3^2)^3 \times 2^6\} \times 5^6$
   (ii) $(x/y)^{12} \times y^{24} \times (2^3)^4$
   (iii) $(5/2)^6 \times (5/2)^2$
   (iv) $(2/3)^5 \times (3/5)^5$
9. Express the numbers appearing in the following statements in the standard form:
   (i) The distance between the Earth and the Moon is 384,000,000 metres.
   (ii) Diameter of the Earth is 1,27,56,000 metres.
   (iii) Diameter of the Sun is 1,400,000,000 metres.
   (iv) The universe is estimated to be about 12,000,000,000 years old.
10. If abc=0, then find the value of $\{((x^a)^b\}^c$
11. The sum of two numbers is (-1/3). If one of the numbers is (-12/3), find the other.

12. Draw the number line and represent following rational number on it:

   (i) (3/4)

   (ii) (-5/8)

   (iii) (-3/16)

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2023-24

CLASS VIII MATHS

1. Astronomy The table shows the mass of the planets, the Sun and the Moon in our solar system.

Celestial Body	Mass (kg)	Mass (kg) Standard Notation
Sun	1,990,000,000,000,000,000,000,000,000,000	1.99×10^{30}
Mercury	330,000,000,000,000,000,000,000	
Venus	4,870,000,000,000,000,000,000,000	
Earth	5,970,000,000,000,000,000,000,000	
Mars	642,000,000,000,000,000,000,000,000	
Jupiter	1,900,000,000,000,000,000,000,000,000	
Saturn	568,000,000,000,000,000,000,000,000	
Uranus	86,800,000,000,000,000,000,000,000	
Neptune	102,000,000,000,000,000,000,000,000	
Pluto	12,700,000,000,000,000,000,000	
Moon	79,500,000,000,000,000,000,000	

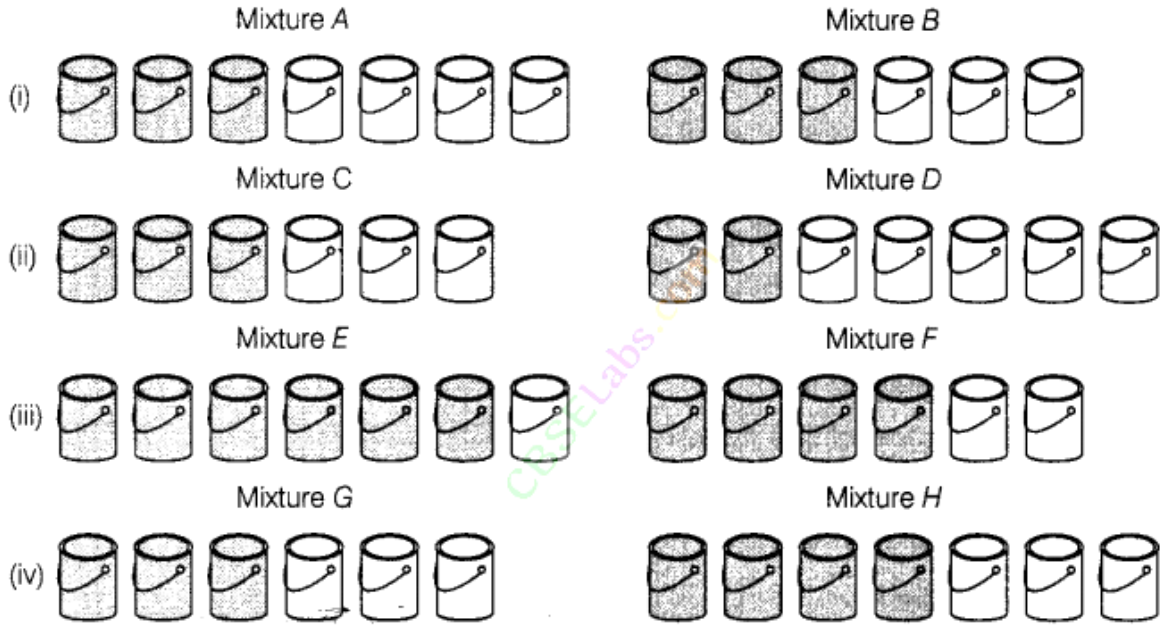
Write the mass of each planet and the Moon in scientific notation.

2. The distance between the Sun and the Earth is 1.496×10^8 km and distance between the Earth and the Moon is 3.84×10^8 m. During solar eclipse, the Moon comes in between the Earth and the Sun. What is the distance between the Moon and the Sun at that particular time?

3. By what number should $(-5)^{-1}$ be divided so that the quotient may be equal to $(-5)^{-1}$?

4. A car covers a distance in 40 minutes with an average speed of 60 km/h. What should be the average speed to cover the same distance in 25 minutes?

5. Campus and Welfare Committee of school is planning to develop a blue shade for painting the entire school building. For this purpose, various shades are tried by mixing containers of blue paint and white paint. In each of the following mixtures, decide which is a lighter shade of blue and also find the lightest blue shade among all of them.



If one container has one litre paint and the building requires 105 litres for painting, how many containers of each type is required to paint the building by lightest blue shade?

6. The student of Anju's class sold posters to raise money. Anju wanted to create a ratio for finding the amount of money, her class would make for different numbers of posters sold. She knew, they could raise Rs 250 for every 60 posters sold.
(a) How much money would Anju's class make for selling 102 posters?
(b) Could Anju's class raise exactly Rs 2000? If so, how many posters would they need to sell? If not, why?

7. Two cylinders A and B are formed by folding a rectangular sheet of dimensions 20 cm x 10 cm along its length and also along its breadth, respectively. Then, find the relation between volume of A and volume of B.

8. The walls and ceiling of a room are to be plastered. The length, breadth and height of the room are 4.5 m, 3m and 350 cm, respectively. Find the cost of plastering at the rate of 8 per sq. m.

9. The base of a parallelogram is (2x + 3) units and the corresponding height is (2x – 3) units. Find the area of the parallelogram in terms of x. What will be the area of a parallelogram of x = 30 units?

10. The cost of a chocolate is Rs (x + 4) and Rohit bought (x + 4) chocolates. Find the total amount paid by him in terms of x. If x = 10, find the amount paid by him.

Kendriya Vidyalaya no.4, ONGC, vadodara.

Holidays homework (Winter Break)

Class – 9

Subject: Mathematics

Session: 2023-24

I. Write / perform 2 activities in maths activity note book.

1. To verify that the angles subtended by an arc at the centre of a circle is double the angle it subtends at any point on the remaining part of a circle, using method of paper cutting,pasting and folding.

2. To verify that the angles in a same segment of a circle are equal ,using the method of paper Cutting ,pasting and folding.

II. Revise/practice all exercise question, examples of lesson 8 (quadrilaterals) to Lesson-11 (surface areas and volumes).

III .SOLVE THE FOLLOWING QUESTIONS IN CW/HW NOTE BOOK

1. Evaluate : $\sqrt[3]{25}$ x $\sqrt[3]{5}$

2. Evaluate ($16)^{\frac{3}{4}} \div (16)^{\frac{1}{4}}$

3. Is the number (3 - $\sqrt{7}$) (3 + $\sqrt{7}$) rational or irrational ? Justify your answer.

4. How many zeros does a cubic polynomial have?

5. Find zero of polynomial p(x)=2x + 3

6. In which quadrant or on which axis does the following points lie?

(-4,2) ; (5 , 0)

7. Write the name of point at which the co-ordinate axis meet.

8. Write the equation representing x axis.

9. Find the value of k if the line on 2x +y = k passes through the point (3 ,5) .

10. Can a triangle have all the angles less than 60^0 ? Give reason.

11 Can a triangle have two obtuse angles? Give reason.

12. Find the ∠ whose complement is equal to the ∠ itself.

13 Find the ∠ whose supplement is equal to the ∠ itself.

14. It is given that triangle ABC is congruent to triangle DEF. Is it true to say that AB=EF? Justify your answer.

15.In triangles ABC and PQR, ∠ A = ∠ Q and ∠ B = ∠ R. Which side of triangle PQR should be equal to side AB of triangle ABC so that the two triangles are congruent? Give reason for your answer.

16. In a parallelogram PQRS, if ∠ P = $(3x - 5)^0$ and ∠ Q= $(2x + 15)^0$.

17.Diagonals of a quadrilateral ABCD bisect each other. If ∠ A = 35^0 , determine ∠ A.

18. The angles of a quadrilateral are $4x^0$, $7x^0$, $15x^0$ and $10x^0$. Find the smallest and largest angle of the quadrilateral.

19. If a circle is divided into 8 equal parts, find the ∠ subtended by each arc at the centre. What is the minimum number of points required to determine a unique circle?

20. Find the length of each side of an equilateral triangle having an area of $9\sqrt{3}$ cm^2

21.Fill in the blanks :

(a) triangle with sides a,b,c has semi perimeter s= --------- and area = ----------

(b) triangle with base (b) and altitude (h) has area = -------

(c) isosceles triangle with base a and equal side b then area = -------

(d) equilateral triangle with side a then altitude = ------ and area = --------

(e) the point at which abscissa and ordinate have different signs will lie in -------

And ------- quadrants.

(f)point (-6 , 5) lie in the ---------- quadrant.

(g) A point in ---------- quadrant has positive abscissa and negative ordinate.

(h) the coordinate of point whose ordinate is -3 and which lies on y axis is -------

22. If the non parallel sides of a trapezium are equal, prove that it is cyclic.

COMPETENCY BASED QUESTIONS

23. Three girls Reshma, Salma and Mandeep are playing a game by standing on a circle of radius 5m drawn in a park. Reshma throws a ball to salma, salma to mandeep, mandeep to Reshma. If the distance between reshma and salma & between salma and mandeep is 6 m each, what is the distance between Reshma and mandeep?

24.Two chords AB and CD of length 5cm and 11 cm respectively of a circle are parallel to each other and are on opposite sides of its centre. If the distance between AB and CD is 6 cm, find the radius of the circle.

25. An umbrella is made by stitching 12 triangular pieces of cloth of two different designs, each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each design is required for the umbrella ?