



MATHS

BOOKS - VK GLOBAL PUBLICATION MATHS (HINGLISH)

VALUE-BASED QUESTIONS

Unit I Number Systems

1. In order to celebrate Van Mahotsav, the students of a school planned to plant two types of trees in the nearby park. They decided to plant 144 trees of type A and 84 trees of type B. If the two types of plants are to be in the same number of columns, find the maximum number of columns in which they can be planted.

What values do these students possess ?

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2. In a seminar, the number of participants in Hindi, English and Mathematics are 60, 84 and 108 respectively. Find the minimum number of rooms required if, in each room the same number of participants are to be seated and all of them being in the same subject.

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3. Three sets of English, Hindi and Mathematics books have to be stacked in such a way that all the books are stored topic wise and the height of each stack is the same. The number of English books is 96, the number of Hindi books is 240 and the number of Mathematics books is 336. Assuming that the books are of the same thickness, determine the number of stacks of English, Hindi and Mathematics books.

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4. There is a circular path around a sports field. Priya takes 12 minutes to drive one round of the field. While Ravish takes 10 minutes for the same.

Suppose they both start from the same point and at the same time and go in the same direction.

(i) After how many minutes will they meet again at the starting point ?

(ii) Which mathematical concept is used in this problem ?

(iii) What is the value discussed in this problem ?



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Unit Ii Algebra

1. Some people collected money to be donated in some orphanages. A part of the donation is fixed and remaining depends on the number of children in the orphanage. If they donated ₹ 9,500 in the orphanage having 50 children and ₹ 13,250 with 75 children, find the fixed part of the donation and the amount donated for each child .

What values do these people possess ?



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2. A fraction becomes $\frac{9}{11}$ if 2 is added to both numerator and the denominator. If 3 is added to both the numerator and the denominator it becomes $\frac{5}{6}$. Find the fraction.



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3. Reading book in a library has a fixed charge for the first three days and an additional charge for each day thereafter. Shristi paid ₹ 27 for a book kept for seven days. While Bunty paid ₹ 21 for the book kept for five days.

(i) Find the fixed charge.

(ii) Find how much additional charge Shristi and Bunty paid.

(iii) Which mathematical concept is used in this problem ?

(iv) Which value does it depict ?



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4. An honest person invested some amount at the rate of 12% simple interest and some other amount at the rate of 10% simple interest. He

received yearly interest of ₹ 130. But if he had interchanged amount invested, he would have received ₹ 4 more as interest .

How much amount did he invest at different rates. ?

(ii) Which mathematical concept is used in this problem.?

(iii) Which value is being emphasized here ?



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5. If the price of petrol is increased by ₹ 2 per litre, a person will have to buy 1 litre less petrol for ₹ 1740. Find the original price of petrol at that time .

(a) Why do you think the price of petrol is increasing day-by-day?

(b) What should we do to save petrol ?



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6. One fourth of a group of people claim they are creative, twice the square root of the group claim to be caring and the remaining 15 claim they are optimistic . Find the total number of people in the group.

(a) How many persons in the group are creative ?

(b) According to you which one of the above three values is more important for development of a society ?

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7. In the centre of rectangular plot of land of dimensions $120m \times 100m$, a rectangular portion is to be covered with trees so that the area of the remaining part of the plot is $10500m^2$. Find the area to be planted.

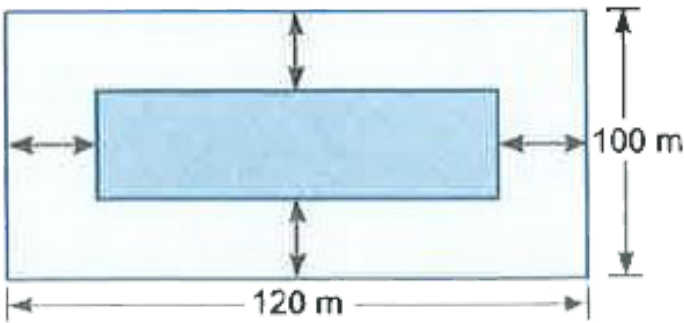


Fig. 1

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8. Mr. Ahuja has two square plots of land which he utilises for two different purposes -one for providing free education to the children below the age of 14 years and the other to provide free medical services for the needy villagers. The sum of the areas of two square plots is $15425m^2$. If the which qualities of Mr. Ahuja are being depicted in the question ?

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9. A takes 3 days longer than B to finish a work . But if they work together, then work is completed in 2 days. How long would each take to do it separately. Can you say cooperation helps to get more efficiency ?

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10. In a class of 48 students, the number of regular students is more than the number of irregular students. Had tow irregular students been regular, the product of the number to two types of students would be

380 . Find the number of each type of students.

(a) Why is regularity essential in life ?

(b) Write values other than regularity that a student must possess.



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11. In a school, students decided to plant trees in and around the school to reduce air pollution. It was decided that the number of trees, that each section of each class will plant, will be double of the class in which they are studying. If there are 1 to 12 classes in the school and each class has two sections, find how many trees were planted by the students. Which value is shown in this question?



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12. A Sum of ₹ 3150 is to be used to give six cash prizes to students of a school for overall academic performance, punctuality, regularity, cleanliness, confidence and creativity. If each prize is ₹ 50 less than its preceding prize, find the value of each of the prizes.

(a) Which value according to you should be awarded with the maximum amount ? Justify your answer.

(b) Can you add more values to the above ones which should be awarded ?

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13. A person donates money to a trust working for education of children and women in some villages. If the person donates ₹ 5,000 in the first year and his donation increases by ₹ 250 every year, find the amount donated by him in the eighth year and the total amount donated in eight years.

(a) Which mathematical concept is being used here?

(b) Write any two values the person mentioned here possess.

(c) why do you think education of women is necessary for the development of a society ?

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14. A passenger, while boarding the plane, slipped from the stairs and got hurt. The pilot took the passenger in the emergency clinic at the airport for treatment. Due to this, the plane got delayed by half an hour. To reach the destination 1500 km away in time, so that the passengers could catch the connecting flight, the speed of the plane was increased by 250 km/h than the usual speed. Find the usual speed of the plane.

What value is depicted in this question ?



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15. Reshma wanted to save at least ₹ 6,500 for sending her daughter to school next year (after 12 months). She saved ₹ 450 in the first month and raised her savings by ₹ 20 every next month. How much will she be able to save in next 12 months. ? Will she be able to send her daughter to the school next year ?

What value is reflected in this question ?



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1. Andya and Nitya planted some trees in a square garden as shown in the Fig. 2, both arguing that they have planted them in a straight line. Find who is correct ? Justify your decision. (N stands for Nitya and A for Aadya)

Are the two girls contributing anything to the society ? Justify your answer .



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2. The students of class X of a school undertook to work for the campaign 'Say No to plastic' in a city. They took the map of the city and form coordinate plane on it to divide their areas. Group A took the region covered between the coordinates $(1,1), (-3,2), (-2,-2)$ and $(1,-3)$ taken in order. Find the area of the region covered by group A.

(i) What are the harmful effects of using plastic ?

(ii) How can you contribute in spreading awareness for such campaign ?



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Unit Iv Geometry

1. In $\triangle ABC$, D, E, F are respectively the mid points of the sides AB, BC and AC . Find ratio of the area of $\triangle DEF$ and area of $\triangle ABC$.

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2. A man steadily goes 4 m due East and then 3 m due. North. (i) Find the distance from initial point to last point.

(ii) which mathematical concept is used in this problem ?

(iii) What is its value ?

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3. Two poles of height 'a' metres and 'b' meters are 'p' meters apart. Prove that the height of the point of intersection of the lines joining the top of each pole to the foot of the opposite pole is given by $\frac{ab}{a+b}$ meters.



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Unit V Trigonometry

1. A circus artist is climbing from the ground along a rope stretched from the top of a vertical pole and tied at the ground. The height of the pole is 10 m and angle made by the top with ground level is 60° .

- (i) Calculate the distance covered by the artist in climbing to the top of the pole.
- (ii) Which mathematical concept is used in this problem ?
- (iii) What is its value ?



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2. A tree is broken by the wind. The top struck the ground at an angle of 45° and at a distance of 30 m from the root.

- (i) Find whole height of the tree.

(ii) which mathematical concept is used in this problem ?

(iii) Which value is being emphasised here ?

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3. A person standing on the bank of a river observes that the angle of elevation of the top of a tree standing on the opposite bank is 60° . When he move 40 metres away from the bank, he finds the angle of elevation to be 30° . Find the height of the tree and the width of the river.

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4. The angle of elevation of the top of a chimney from the top of a tower is 60° and the angle of depression of foot of the chimney from the top of the tower is 30° . If the height of the tower is 40 m find the height of the chimney.

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1. A manufacturer involved ten children in colouring playing top (lattu) which is shaped like a cone surmounted by a hemisphere. The entire top is 5 cm in height and the diameter of top is 3.5 cm. Find the area they had to paint if 50 playing tops were given to them. (Take $\pi = \frac{22}{7}$)

(a) How is child labour an abuse for the society?

(b) What steps can be taken to abolish child labour?



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2. A child prepares a poster on 'Save Energy' on a square sheet whose each side measures 60 cm. At each corner of the sheet, she draws a quadrant of radius 17.5 cm in which she shows the ways to save energy. At the centre, she draws a circle of diameter 21 cm and writes a slogan in it. Find the area of the remaining sheet.

(a) write down the four ways by which energy can be saved.

(b) Write a slogan on 'Save Energy' .

(c) Why do we need to save energy ?

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3. A teacher brings clay in the classroom to teach the topic 'mensuration' . She forms a cylinder of radius 6 cm and height 8 cm with the clay. Then she moulds that cylinder into a sphere. Find the radius of the sphere formed .

Do teaching aids enhance teaching learning process ? Justify your answer.

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4. A tent is in the shape of a cylinder surmounted by a conical top. If the height and diameter of the cylindrical part are 2.1 m and 4 m respectively, and the slant height of the top is 2.8 m, find the area of the canvas used for making the tent. A

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5. Due to heavy floods in a state, thousands were rendered homeless. 50 schools collectively offered to the state government to provide place and the canvas for 1500 tents to be fixed by the government and decided to share the whole expenditure equally. The lower part of each tent is cylindrical of base radius 2.8 m and height 3.5 m, with conical upper part of same base radius but of height 2.1 m. If the canvas used to make the tents costs Rs. 120 per sq. m, find the amount shared by each school to set up the tents. What value is generated by the above problem ? (Use $\pi = \frac{22}{7}$)



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Unit Vii Statistics Probability

1. The amount donated by some households in their religious organisations are as follows :

Amount (in ₹) Number of households

Less than 100 14

Less than 200 22

Less than 300 37

Less than 400 58

Less than 500 67

Less than 600 75

Calculate the arithmetic mean for the above data.

What values do these households possess ?



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2. Some people of a society decorated their area with flags and tricolour ribbons on Republic Day .The following data shows the number of person in different age groups who participated in the decoration :

Age in years	5 – 15	15 – 25	25 – 35	35 – 45	45 – 55	55 – 65
Number of patients	6	11	21	23	14	5

Find the mode of the above data.

What values do these persons possess ?



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3. The table below gives the distribution of villages under different heights from sea level in a certain region. Compute the mean height of the region:

Height (in metres)	200	600	1000	1400	1800	2200
No. of village:	142	265	560	271	89	16

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4. (i) Find the mean of children per family from data given below :

No. of children	0	1	2	3	4	5
No. of families	5	11	25	12	5	2

(ii) which mathematical concept is used in this problem ?

(iii) Which value is discussed here ?

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5. In a survey, it was found that 40% people use petrol, 35% use diesel and remaining use CNG for their vehicles. Find the probability that a person chosen at random uses CNG.

Which fuel out of the above three is appropriate for the welfare of the society?

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6. In a survey, it was found that 30% of the population is using non-biodegradable products while the remaining is using biodegradable products. What is the probability that a person chosen at random uses non-biodegradable products?

Which type of products should be used in a society for its proper development-biodegradable or non-biodegradable? Justify your answer.

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7. A school gives awards to the students of each class-5 for bravery, 3 for punctuality, 3 for full attendance, 4 for social service and 5 for self-confidence. An awarded student is selected at random. What is the probability that he/she is being awarded for (i) punctuality (ii) self confidence.



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8. Arushi, Mahi and Saina were fighting to get first chance in a game. Arushi says. "Let us toss two coins. If both heads appear. Mahi will take first chance, if both tails appear, Saina will get it and if one head and one tail appears, I will get the chance. "

- (i) What is the probability of Arushi getting the first chance ?
- (ii) Is her decision fair ?
- (iii) What quality of her character is being depicted here ?



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