

Class X

2022-23

Mathematics

Holiday's Homework assignment

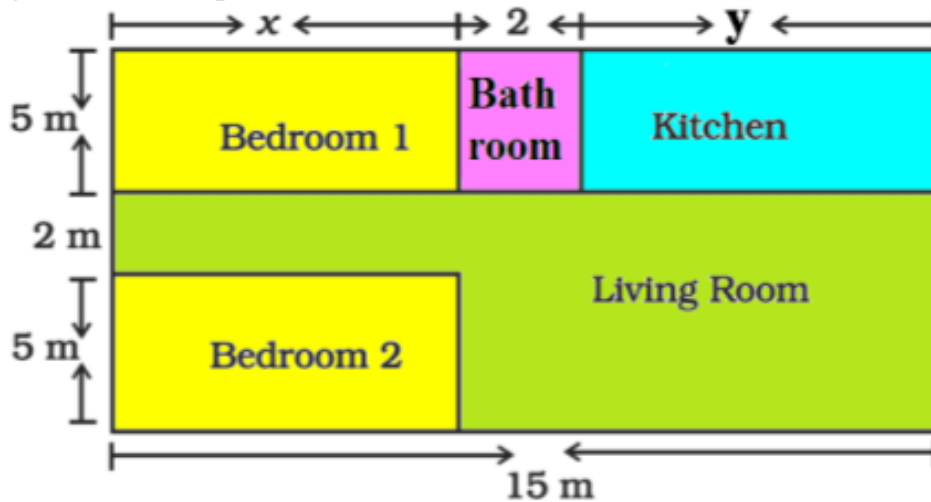
Chapter-1 and Chapter-3

1. Is $7 \times 5 \times 3 \times 2 + 3$ a composite number? Justify your answer.
2. Show that $\sqrt{3}$ is irrational.
3. Show that $5 - 2\sqrt{3}$ is an irrational number.
4. In a competitive examination, 1 mark is awarded for each correct answer while $\frac{1}{2}$ marks is deducted for each wrong answer. Jayanti answer 120 questions and got 90 marks. How many questions did she answer correctly?
5. Draw the graph of the following equations. $2x - y = 1$ and $x + 2y = 13$
 - (i) Find the solution of the equation from the graph
 - (ii) Shade the triangular region formed by the lines and the y-axis and find the area of the region
6. Find the value of m for which the pair of linear equations:
$$2x + 3y - 7 = 0 \text{ and}$$
$$(m - 1)x + (m + 1)y = 3m - 1$$
7. Solve the following system of pair of linear equations:
$$217x + 131y = 913$$
$$131x + 217y = 827$$
8. Find the value of k for which the pair of linear equations
$$kx + 3y = k - 2 \text{ and}$$
$$12x + ky = k$$
has no solution.
9. Find the four angles of cyclic quadrilateral ABCD in which $\angle A = (2x - 1)^\circ$, $\angle B = (y + 5)^\circ$, $\angle C = (2y + 15)^\circ$ and $\angle D = (4x - 7)^\circ$.
10. Find the value of m for which the following pair of linear equations have infinitely many solutions:
$$2x + 3y - 7 = 0 \text{ and}$$
$$(m - 1)x + (m + 1)y = 3m - 1$$
11. If $31x + 43y = 117$ and $43x + 31y = 105$, then find the value of $x - y$
12. Five years ago, A was thrice as old as B and ten years later A shall be twice as old as B, then find the present age of A.
13. Solve the following system of linear equations:
$$\frac{x}{a} + \frac{y}{b} = a + b$$

$$\frac{x}{a^2} + \frac{y}{b^2} = 2$$

Case Study Based Questions:

14. Amit is planning to buy a house and the layout is given below. The design and the measurement has been made such that areas of two bedrooms and kitchen together is 95 sq.m



Based on the above information, answer the following questions:

- i) Form the pair of linear equations in two variables from this situation.
 - ii) Find the length of the outer boundary of the layout.
 - iii) Find the area of each bedroom and kitchen in the layout.
 - iv) Find the area of living room in the layout.
 - v) Find the cost of laying tiles in kitchen at the rate of Rs. 50 per sq.m
15. Shalvi wants to organize her birthday party. She is very happy on her birthday. She is very health conscious, thus she decided to serve fruits only in her birthday party. She has 36 apples and 60 bananas at home and decided to serve them. She wants to distribute fruits among guests. She does not want to discriminate among guests, so she decided to distribute fruits equally among all.

Based on the above information, answer the following questions:

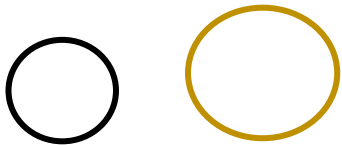
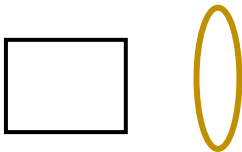
- (i) How many maximum guests Shalvi can invite?
- (ii) How many apples and bananas will each guest get?
- (iii) Shalvi decides to add 42 mangoes also. In this case how many maximum guests Lavanya can invite?
- (iv) How many total fruits will each guest get?
- (v) If Shalvi decides to add 3 more mangoes and remove 6 apples in total fruits, in this case how many maximum guests Lavanya can invite?

3. Maths Vocabulary Cards

Instructions

- Prepare five maths vocabulary cards on the topic allotted to your respective roll numbers.
- Prepare it on an A-4 size coloured sheet, neatly divided into four sections – Term, definition, Example, Non Example.

Example:

<u>Term</u> Circle	<u>Definition</u> Set of points equidistant from a fix point
<u>Examples</u> 	<u>Non examples</u> 

For Roll No. 1 to 5

Rational numbers, fraction, additive identity, multiplicative identity, multiplicative inverse.

For Roll No. 6 to 10

Quadrilateral, trapezium, parallelogram, kite, square.

For Roll No. 11 to 15

Histogram, bar graph, pie chart, pictograph, probability.

For Roll No. 16 to 20

Constant Polynomial, zero polynomial, linear polynomial, quadratic polynomial, cubic polynomial,

For Roll No. 21 to 25

Algebraic expression, zero of a polynomial, monomial, binomial, trinomial.

For Roll No. 26 to 30

Cube, cuboids, cylinder, Area, volume

For Roll No. 31 to 35

Circle, chord, arc, diameter, radius.

For Roll No. 35 onwards

Square of a number, square root of a number, cube of a number, cube root of a number, Pythagorean triplet.