

**HOLIDAYS HOMEWORK
MATHS**

CLASS 6

1. Revise try these and examples of Ch-1 and 2 in holidays homework notebook.
2. Do assignment in holiday's homework notebook.
3. Observe mathematical shapes from your surrounding; write name of at least 6 shapes and draw any 2 of them .
4. Paste 5 Mathematical puzzle: Sudoku on a colored sheet and solve them.

CLASS 7

1. Revise try these and examples of Ch-1 and 2 in holidays homework notebook.
2. Do assignment in holiday's homework notebook.
3. Prepare a paper pizza having the following fractional distributions:
(i) $\frac{3}{8}$ as green pepper (ii) $\frac{2}{8}$ has black olives (iii) $\frac{2}{8}$ has onions
(iv) $\frac{1}{8}$ has onions and mushrooms (v) whole cheese (vi) $\frac{4}{8}$ has pepperoni
4. Analyze your surroundings and Collect real life examples where positive integers and negative integers are used.

CLASS 8

1. Revise examples of ch-1 and Ex-2.1,2.2,2.3 and 2.4 in holiday's homework notebook.
2. Do assignment in holiday's homework notebook.
3. Suppose you have to design school magazine cover in mathematical way (mathematical figures, symbols, formulas anything related to Maths can be used). Sketch your ideas on a A4 size sheet.
4. Consider any five situations from daily life (for example ages of family members, height of brother and sister...) and form word problems on them and also solve them.

CLASS 9

1. Do examples of ch 1 to 4

2. Activity-1 : Framing Linear Equations

Find out the age of your grandfather and father. Form a linear equation between these two –

- i) Age of your grandfather and your age.
- ii) Your age and your father's age.

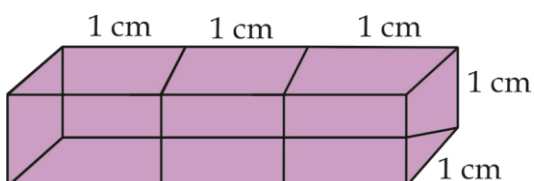
3. **Activity 2:** Figures on the same base.

- i) Construct a square and a rhombus on the same base of 6 cm. How many such rhombuses can be constructed?

- ii) Construct a parallelogram and rectangle on the same base of 9 cm and between the same parallels. How many parallelograms can be drawn on the same base and between the same parallels?

4: Activity 3: Volume and Surface area of cube and cuboid

Take 3 dice of side 1 cm. Keep these together as shown.



Find the surface area and volume of all cubes separately and also find volume of the cuboid formed.

5: Activity-4 :Factorisation

You know an identity is true for all values of the variable for e.g.

$$(a+b)^2 = a^2 + 2ab + b^2 \quad , \quad (a-b)^2 = a^2 - 2ab + b^2 \quad , \quad (a+b)(a-b) = a^2 - b^2$$

Now write 5 algebraic expression in the form of the identity and factorise them using the identity.

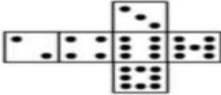
6: Activity 5 :Linear Graphs

Note down temperature for one week and then draw a linear graph. Then find out the hottest and the coolest day of the week.

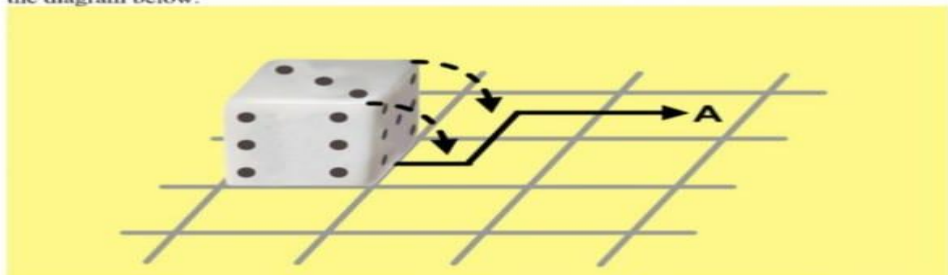
7: Draw a net of following die and answer the questions

Mathematics
Mysterious Die

Jenny has an mysterious die. The net of the die is as shown below:



This die was placed on a grid. The die can be moved on the grid by rotating the die, as shown in the diagram below.



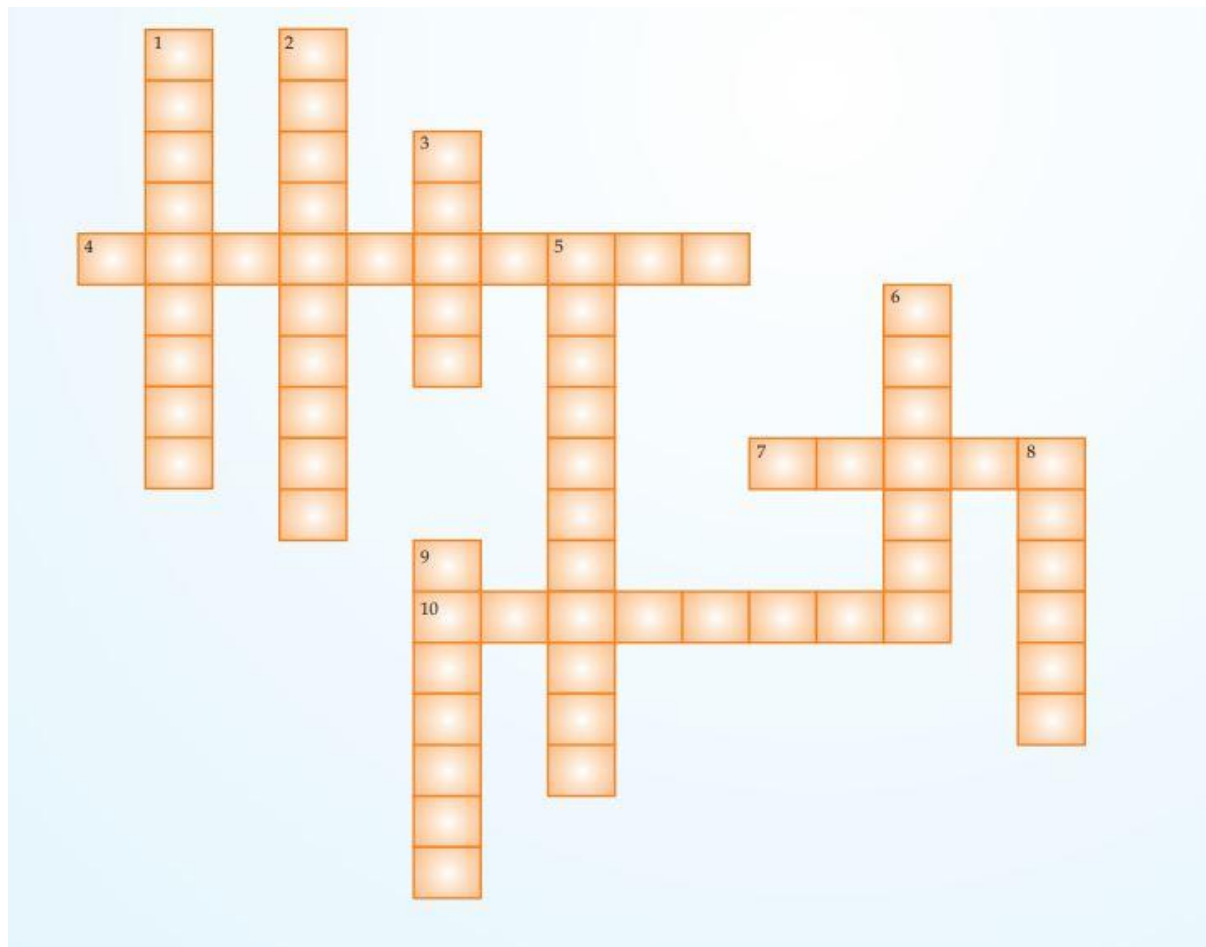
Question 1
What is the number of dots on the top face after the first rotation?

Question 2
What is the number of dots on the top face when the die is at point A?

CLASS 10 HOLIDAYS HOMEWORK

1. DO EXAMPLES OF CHAPTER 1,2,3,4 (TILL EXERCISE 4.2) IN A SEPARATE NOTEBOOK.
2. DO ACTIVITY 1,2,3 IN ACTIVITY NOTEBOOK.

ACTIVITY 1-CH.-1 REAL NUMBERS CROSSWORD PUZZLE



ACROSS

4. Fundamental theorem of _____ states that every composite number can be uniquely expressed as a product of primes.
7. The _____ factorization of composite numbers is unique.
10. _____ numbers have either terminating or non-terminating repeating decimal expansion.

DOWN

1. _____ is a sequence of well defined steps to solve any problem.
2. Numbers having non-terminating, non-repeating decimal expansion are known as _____.
3. A proven statement used as a stepping stone towards the proof of another statement is known as _____.
5. Decimal expansion of $\frac{3}{35}$ is _____.
6. The _____ expansion of rational numbers is terminating if the denominator has 2 & 5 as its only factors.
8. _____ division algorithm is used to find the HCF of two positive numbers.
9. For any two numbers, $\text{HCF} \times \text{LCM} = \text{_____}$ of numbers.

ACTIVITY 2- TO FIND ZEROES OF A QUADRATIC POLYNOMIALS GRAPHICALLY.

Aim

To draw the graph of the quadratic polynomial and observe.

- i) Shape of the curve when coefficient of x^2 is positive.
- ii) Shape of the curve when coefficient of x^2 is negative.

iii) Its number of zeroes.

Materials Required

Graph sheets and maths kit.

Procedure

1. Consider the following quadratic polynomial $p(x)$ of the form, ax^2+bx+c

Case I

$$p(x)=x^2+2x+1(a>0)$$

Case II

$$p(x)=x^2+1-(a>0)$$

Case III

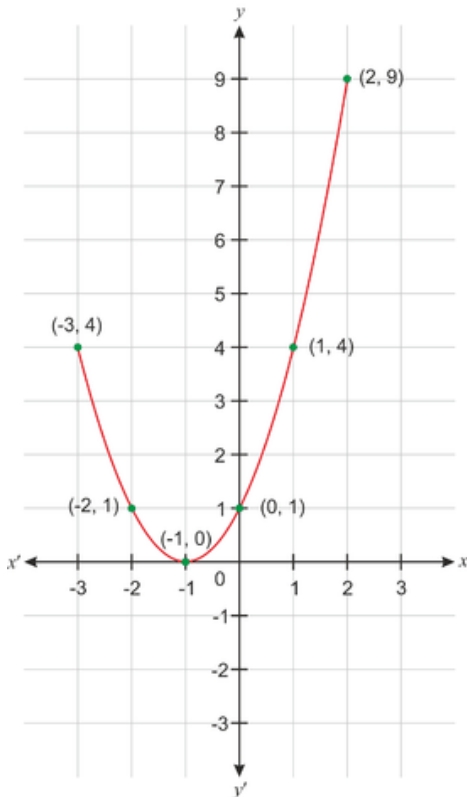
$$p(x)=4-x^2(a<0)$$

2. Find ordered pairs for different values of x for the three cases and plot them.
3. Join the plotted points by a free hand curve.

Case I: x^2+2x+1

x	0	1	-1	2	-2	-3
y	1	4	0	9	1	4

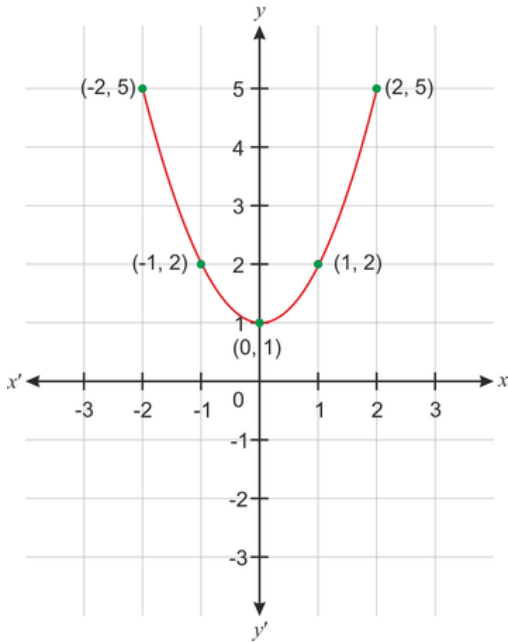
(a) $x^2 + 2x + 1$



Case II: x^2+1

x	0	-1	1	2	-2
y	1	2	2	5	5

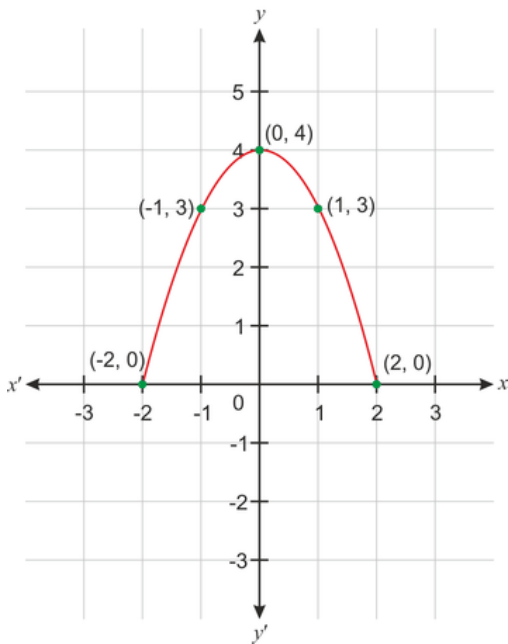
(b) $x^2 + 1$



Case III: $4 - x^2$

x	0	1	-1	2	-2
y	4	3	3	0	0

(c) $4 - x^2$



Observation Table

S.No	Polynomial	Shape of	Direction of	Coordinates of	Absicca of	Number
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		curve	parabola	the point of intersection with x-axis	coordinates	of zeroes
1	x^2+2x+1	Parabola	Upward	-1, 0	-1	1
2	x^2+1	Parabola	Upward	Nil	Nil	0
3	$4-x^2$	Parabola	Downward	(2, 0) & (-2, 0)	-2, 2	2

Conclusion

1. The shape of the curve obtained by drawing the graph of a quadratic polynomial is a parabola.
2. When coefficient of x^2 is positive ($a>0$). The parabola open upwards.
3. When coefficient of x^2 is negative ($a<0$). The parabola opens downwards.
4. A polynomial of degree 2 is a quadratic polynomial has at most 2 zeroes.

ACTIVITY-3 TO FIND ZEROES OF A QUADRATIC POLYNOMIALS GRAPHICALLY.

Aim

To draw the graph of the quadratic polynomial and observe.

- i) Shape of the curve when coefficient of x^2 is positive.
- ii) Shape of the curve when coefficient of x^2 is negative.
- iii) Its number of zeroes.

Materials Required

Graph sheets and maths kit.

Procedure

1. Consider the following quadratic polynomial $p(x)$ of the form,

$$ax^2+bx+c$$

Case I $p(x)=x^2+2x+1(a>0)$

Case II $p(x)=x^2+1(a>0)$

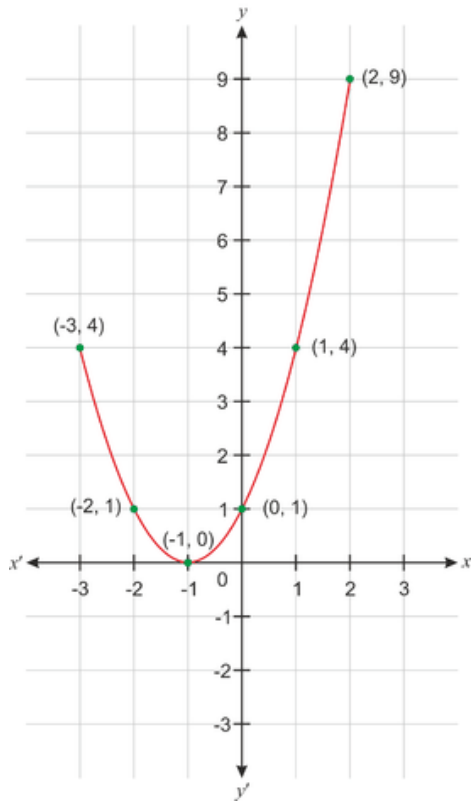
Case III $p(x)=4-x^2(a<0)$

2. Find ordered pairs for different values of x for the three cases and plot them.
3. Join the plotted points by a free hand curve.

Case I: x^2+2x+1

X	0	1	-1	2	-2	-3
Y	1	4	0	9	1	4

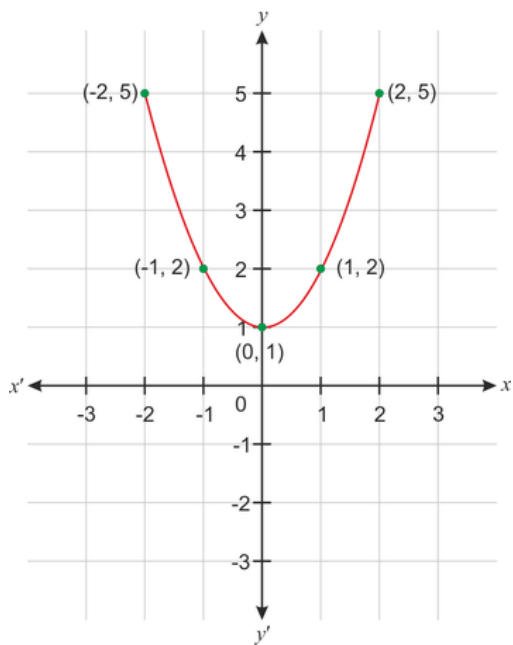
(a) $x^2 + 2x + 1$



Case II: $x^2 + 1$

X	0	-1	1	2	-2
Y	1	2	2	5	5

(b) $x^2 + 1$

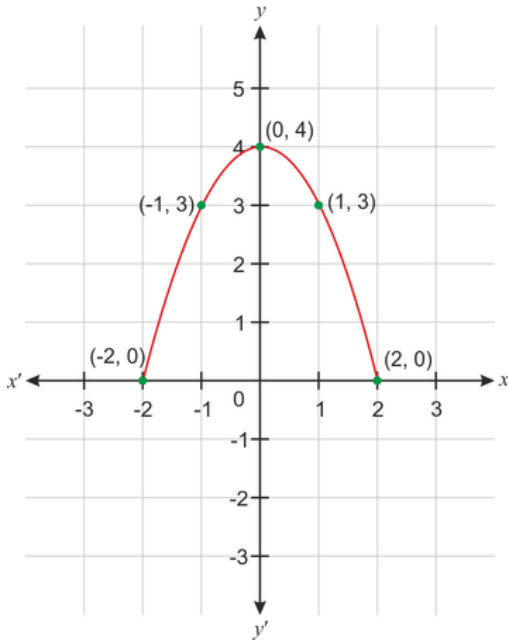


Case III: $4 - x^2$

X	0	1	-1	2	-2
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Y	4	3	3	0	0
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(c) $4 - x^2$



Observation Table

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Conclusion

1. The shape of the curve obtained by drawing the graph of a quadratic polynomial is a parabola.
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4. A polynomial of degree 2 is a quadratic polynomial has at most 2 zeroes.

3. ASSIGNMENT BASED ON CHAPTER-1,2,3,4. (do in separate notebook)

Q-1. (i) Define Euclid Division Lemma.

(ii) Write the zero of the polynomial $x^2 - x - 6$

(iii) State the condition so that the straight lines as graphs of linear equations $a_1x + b_1y + c_1 = 0$, and $a_2x + b_2y + c_2 = 0$, intersect each other at a point.

(iv) Determine the nature of the roots of $-2x^2 - 4x + 3 = 0$

- Q-2. Find the zero of the following quadratic polynomial and verify the relationship between the zeros and their coefficient. $5X^2-10X-3$
- Q-3. Find the value of p for which the pair of linear equations $10x + 3 py - 1 = 0$, $5x + 3y - 2 = 0$ has exactly one solution.
- Q-4. Using quadratic formula, solve the following quadratic equation:

$$\frac{x+2}{x-1} + \frac{x+1}{x+3} = \frac{2}{x+4}$$
- Q-5. On dividing $3x^3+4x^2+5x-13$ by a polynomial $g(x)$, the quotient and remainder was $3x + 10$ and $16x - 43$ respectively. Find the polynomial $g(x)$.
- Q-6. Solve the following system of linear equations graphically: $2x - y = 4$, $x - y = 1$;
- Q-7. By using division algorithm, find the largest number which when divides 969 and 2059, the remainders obtained are 9 and 11 respectively.
- Q-8. Use Euclid's division algorithm to find the HCF of the following pair of positive integers: 3444, 410.
- Q-9. Show that any positive even integer is of the form $4q$ or $4q+2$, where q is a whole number.
- Q-10. Find a quadratic polynomial each with the two given zeroes as below-
 a) 5, -11
 b) $\frac{1}{2}$, $-\frac{3}{7}$
- Q-11. Find all the zeroes of the polynomial $x^4+x^3-9x^2-3x+18$, if it is given that two of its zeroes are $-\sqrt{3}$ and $\sqrt{3}$.
- Q-12. For what value of k will the following system of linear equations have an infinite number of solutions. $4x+3y=3$;
 $(2k+3)x+(2k+1)y=4(k-1)$
- Q13. If the numerator of a fraction is multiplied by 2 and its denominator is increased by 1, it becomes 1. However, if the numerator is increased by 4 and the denominator is multiplied by 2, then the ratio of the numerator and denominator is 1:2. Form a linear equation for the problem and solve via substitution method and hence find the fraction.
- Q-14. The product of 2 consecutive odd integers is 483. Find the integers.
- Q15. A fast train takes 2 hours less than a slow train for a journey of 480 km. if the speed of the slow train is 20 km/h less than that of the fast train, find the speeds of the two trains.

HOLIDAY'SHOMEWORK

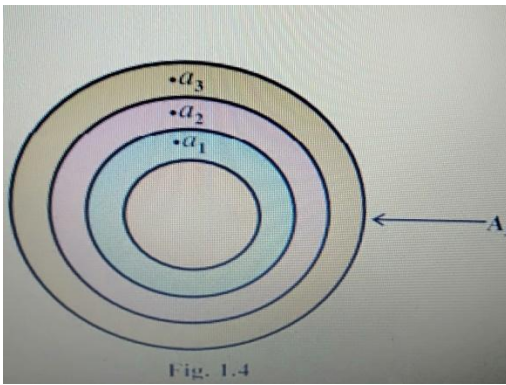
CLASS-XI

(A) Do the NCERT examples of Ch-1 and 2.

(B) Solve the given assignment

(C) Do the following activities in activity file OR sheets

i) To find number of subsets of a given set. Hence, verify that total number of subsets in set of 'n' elements is 2^n .



ii) To verify distributive law using Venn diagrams.

iii) If $A = \{1, 2, 3, 4, 5, 6\}$ and $B = \{a, b, c, d, e, f\}$. Take suitable examples of a set A and B and write at least 5 relations which are functions and at least 5 relations which are not functions. Explain by arrow diagram.

iv) Draw graph of $f(x) = |x - 3|$

v) If set $A = \{1, 2, 3, 4\}$

Give two examples of following relations:

a) Reflexive relation

b) Symmetric relation

c) Transitive relation

d) Reflexive but not symmetric

e) Reflexive but not transitive

f) Reflexive, symmetric and transitive

CLASS-XII (HOLIDAY HW)

A) Revise the following chapters:-

Ch-2: Inverse Trigonometric Functions

Ch-3: Matrices

Ch-4: Determinants

Ch-5:Continuityanddifferentiability

Writeallpropertiesandformulasofabovechaptesonseparatesheet.

B)DoNCERTexamples,activitiesandgivenassignment.

C)Plotthegraphof $y=\sin^{-1}x$, $\cos^{-1}x$ and $\tan^{-1}x$ ongraphpaper.