OUR INDIA INTERNATIONAL SCHOOL

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Summer Break Holiday Homework

Grade- X

(The summer holiday homework is also available on school website ie. www.oiis.in)

To be ready for tomorrow's opportunities, do your homework today. Learn, refine your skills and focus on your growth.

Dear Students,

Summer has arrived and brought with it you're amazing and fun-filled holidays. Summer break is a well-deserved opportunity to relax and unwind by indulging in various activities. Your Holiday Homework has been specially designed for you to be creative, innovative and imaginative while completing your tasks. It will also enable you to recapitulate what was taught in the classrooms. We hope you will play, learn, research, analyze, experiment, imagine, think, value, appreciate and above all enjoy during your holidays.

Wishing you happy holidays!

Instructions for the students:

- Do your holiday homework in a notebook / file folder.
- Mention date and day when you do your work.
- Use your creativity and imagination wherever required,
- The last date of submitting the holiday homework after three days of school re- opens.

Social Science Holiday Homework

Subject	Topics Covered	Tasks/Activities
History	The Rise of Nationalism in Europe	- Create a scrapbook or PPT (5–7 slides) on: *Giuseppe Mazzini, Otto von Bismarck, Garibaldi * Unification of Italy & Germany, Greek War *Unification of Germany *Political liberalism and Economic Liberalism *Zollverian
Geography	Resources and Development	- Map Work: Mark soil types & mineral regions on India's map - Project (1–2 pages): Sustainable use of natural resources *Project Tiger
Political Science	Power Sharing & Federalism	*Power Sharing: - Why is it important? - Compare Belgium & Sri Lanka - One Indian example *Federalism: - What is federalism? (2 features) - Difference between unitary & federal systems - Three ways federalism is practiced in India - Flowchart: Three levels of govt. (Union, State, Local) - Lists in Constitution: • Union List: Defence, foreign affairs, banking • State List: Police, public health, agriculture • Concurrent List: Education, marriage, forests

Submission Date: July 6, 2025

Note: Neatness, originality, and creativity will be rewarded. Best work will be displayed on the Social Science board in our class.

PRACTICE QUESTIONS

CLASS X : CHAPTER - 1

REAL NUMBERS

1. Write whether every positive integer can be of the form $4q + 2$, where q is an integer. Justify your answer.

2. "The product of two consecutive positive integers is divisible by 2". Is this statement true or false? Give reasons.

3. "The product of three consecutive positive integers is divisible by 6". Is this statement true or false"? Justify your answer.

4. Write whether the square of any positive integer can be of the form $3m + 2$, where m is a natural number. Justify your answer.

5. A positive integer is of the form $3q + 1$, q being a natural number. Can you write its square in any form other than $3m + 1$, i.e., $3m$ or $3m + 2$ for some integer m? Justify your answer.

6. Show that the square of an odd positive integer is of the form $8m + 1$, for some whole number m.

7. Show that the square of any positive integer is either of the form $4q$ or $4q + 1$ for some integer q.

8. Show that cube of any positive integer is of the form $4m$, $4m + 1$ or $4m + 3$, for some integer m.

9. Show that the square of any positive integer cannot be of the form $5q + 2$ or $5q + 3$ for any integer q.

10. Show that the square of any positive integer cannot be of the form $6m + 2$ or $6m + 5$ for any integer m.

11. Show that the square of any odd integer is of the form $4q + 1$, for some integer q.

12. If n is an odd integer, then show that $n^2 - 1$ is divisible by 8.

13. Prove that if x and y are both odd positive integers, then $x^2 + y^2$ is even but not divisible by 4.

14. Show that the square of an odd positive integer can be of the form $6q + 1$ or $6q + 3$ for some integer q.

15. Show that the cube of a positive integer of the form $6q + r$, q is an integer and $r = 0, 1, 2, 3, 4, 5$ is also of the form $6m + r$.

PRACTICE QUESTIONS

CLASS X : CHAPTER - 2

POLYNOMIALS

1. If $p(x) = 3x^3 - 2x^2 + 6x - 5$, find $p(2)$.

2. Draw the graph of the polynomial $f(x) = x^2 - 2x - 8$.

3. Draw the graph of the polynomial $f(x) = 3 - 2x - x^2$.

4. Draw the graph of the polynomial $f(x) = -3x^2 + 2x - 1$.

5. Draw the graph of the polynomial $f(x) = x^2 - 6x + 9$.

6. Draw the graph of the polynomial $f(x) = x^3$.

7. Draw the graph of the polynomial $f(x) = x^3 - 4x$.

8. Draw the graph of the polynomial $f(x) = x^3 - 2x^2$.

9. Draw the graph of the polynomial $f(x) = -4x^2 + 4x - 1$.

10. Draw the graph of the polynomial $f(x) = 2x^2 - 4x + 5$.

11. Find the quadratic polynomial whose zeroes are $2 + \sqrt{3}$ and $2 - \sqrt{3}$.

12. Find the quadratic polynomial whose zeroes are $\frac{3-\sqrt{3}}{5}$ and $\frac{3+\sqrt{3}}{5}$.

13. Find a quadratic polynomial whose sum and product of zeroes are $\sqrt{2}$ and 3 respectively.

14. Find the zeroes of the polynomial $mx^2 + (m + n)x + n$.

15. If m and n are zeroes of the polynomial $3x^2 + 11x - 4$, find the value of $\frac{m}{n}+\frac{n}{m}$

16. If a and b are zeroes of the polynomial $x^2 - x - 6$, then find a quadratic polynomial whose zeroes are $(3a + 2b)$ and $(2a + 3b)$.

17. If p and q are zeroes of the polynomial $t^2 - 4t + 3$, show that $\frac{1}{p}+\frac{1}{q}-2pq+\frac{14}{3}=0$.

18. If $(x - 6)$ is a factor of $x^3 + ax^2 + bx - b = 0$ and $a - b = 7$, find the values of a and b.

19. If 2 and -3 are the zeroes of the polynomial $x^2 + (a + 1)x + b$, then find the value of a and b.

20. Obtain all zeroes of polynomial $f(x) = 2x^4 + x^3 - 14x^2 - 19x - 6$ if two of its zeroes are -2 and -1.

PRACTICE QUESTIONS
CLASS X : CHAPTER – 3
PAIR OF LINEAR EQUATIONS IN TWO VARIABLES
WORD PROBLEMS

I. NUMBER BASED QUESTIONS

SIMPLE PROBLEMS

1. The sum of two numbers is 137 and their difference is 43. Find the numbers.

2. The sum of thrice the first and the second is 142 and four times the first exceeds the second by 138, then find the numbers.

3. Sum of two numbers is 50 and their difference is 10, then find the numbers.

4. The sum of twice the first and thrice the second is 92 and four times the first exceeds seven times the second by 2, then find the numbers.

5. The sum of two numbers is 1000 and the difference between their squares is 25600, then find the numbers.

6. The difference between two numbers is 14 and the difference between their squares is 448, then find the numbers.

7. The sum of two natural numbers is 8 and the sum of their reciprocals is $\frac{8}{15}$. Find the numbers.

TWO-DIGIT PROBLEMS

1. The sum of the digits of a two digit number is 12. The number obtained by interchanging the two digits exceeds the given number by 18. Find the number.

2. Seven times a two-digit number is equal to four times the number obtained by reversing the order of its digit. If the difference between the digits is 3, then find the number.

3. The sum of the digits of a two digit number is 9. Also, nine times this number is twice the number obtained by reversing the order of the digits. Find the number.

4. The sum of the digits of a two digit number is 9. If 27 is added to it, the digits of the numbers get reversed. Find the number.

5. The sum of a two-digit number and the number obtained by reversing the digits is 66. If the digits of the number differ by 2, find the number. How many such numbers are there?

6. A two-digit number is 4 more than 6 times the sum of its digit. If 18 is subtracted from the number, the digits are reversed. Find the number.

PRACTICE QUESTIONS

CLASS X : CHAPTER - 4

QUADRATIC EQUATIONS

NATURE OF ROOTS

1. Find the value of k for which the quadratic equation $2x^2 + kx + 3 = 0$ has two real equal roots.

2. Find the value of k for which the quadratic equation $kx(x - 3) + 9 = 0$ has two real equal roots.

3. Find the value of k for which the quadratic equation $4x^2 - 3kx + 1 = 0$ has two real equal roots..

4. If -4 is a root of the equation $x^2 + px - 4 = 0$ and the equation $x^2 + px + q = 0$ has equal roots, find the value of p and q.

5. If -5 is a root of the equation $2x^2 + px - 15 = 0$ and the equation $p(x^2 + x) + k = 0$ has equal roots, find the value of k.

6. Find the value of k for which the quadratic equation $(k - 12)x^2 + 2(k - 12)x + 2 = 0$ has two real equal roots..

7. Find the value of k for which the quadratic equation $k^2x^2 - 2(k - 1)x + 4 = 0$ has two real equal roots..

8. If the roots of the equation $(a - b)x^2 + (b - c)x + (c - a) = 0$ are equal, prove that $b + c = 2a$.

9. Prove that both the roots of the equation $(x - a)(x - b) + (x - b)(x - c) + (x - c)(x - a) = 0$ are real but they are equal only when $a = b = c$.

10. Find the positive value of k for which the equation $x^2 + kx + 64 = 0$ and $x^2 - 8x + k = 0$ will have real roots.

11. Find the value of k for which the quadratic equation $kx^2 - 6x - 2 = 0$ has two real roots.

12. Find the value of k for which the quadratic equation $3x^2 + 2x + k = 0$ has two real roots.

13. Find the value of k for which the quadratic equation $2x^2 + kx + 2 = 0$ has two real roots.

14. Show that the equation $3x^2 + 7x + 8 = 0$ is not true for any real value of x.

15. Show that the equation $2(a^2 + b^2)x^2 + 2(a + b)x + 1 = 0$ has no real roots, when $a \neq b$.

16. Find the value of k for which the quadratic equation $kx^2 + 2x + 1 = 0$ has two real and distinct roots.

17. Find the value of p for which the quadratic equation $2x^2 + px + 8 = 0$ has two real and distinct roots.

18. If the equation $(1 + m^2)x^2 + 2mcx + (c^2 - a^2) = 0$ has equal roots, prove that $c^2 = a^2(1 + m^2)$.

PRACTICE QUESTIONS
CLASS X : CHAPTER - 4
QUADRATIC EQUATIONS
WORD PROBLEMS CATEGORY WISE

VII. NUMBER BASED QUESTIONS

DIRECT QUESTIONS

1. The difference of two numbers is 5 and the difference of their reciprocals is $\frac{1}{10}$. Find the numbers.
2. Find two consecutive odd positive integers, sum of whose squares is 290.
3. The difference of the squares of two numbers is 45. The squares of the smaller number are 4 times the larger number. Find the numbers.
4. The sum of the squares of the two positive integers is 208. If the square of the larger number is 18 times the smaller number, find the numbers.
5. The denominator of a fraction is 3 more than its numerator. The sum of th[illegible] reciprocal is $2\frac{9}{10}$. Find the fraction.
6. The denominator of a fraction is one more than twice the numerator. The sum of the fraction and its reciprocal is $2\frac{16}{21}$. Find the fraction.
7. Two numbers differ by 3 and their product is 504. Find the numbers.
8. Find three consecutive positive integers such that the sum of the square of the first and the product of the other two is 154.
9. The sum of two numbers is 16 and the sum of their reciprocals is $\frac{1}{3}$. Find the numbers.
10. The sum of two numbers is 18 and the sum of their reciprocals is $\frac{1}{4}$. Find the numbers.
11. The sum of two numbers is 25 and the sum of their reciprocals is $\frac{3}{10}$. Find the numbers.
12. The sum of two numbers is 15 and the sum of their reciprocals is $\frac{3}{10}$. Find the numbers.
13. The sum of a number and its reciprocal is $3\frac{41}{80}$. Find the numbers.
14. The sum of the squares of three consecutive positive integers is 50. Find the integers.
15. Find two natural numbers, the sum of whose squares is 25 times their sum and also equal to 50 times their difference.

TWO-DIGIT PROBLEMS

1. A two digit number is such that the product of its digits is 12. When 36 is added to the number, the digits are reversed. Find the number.
2. A two digit number is such that the product of its digits is 8. When 54 is subtracted from the number, the digits are reversed. Find the number.
3. A two digit number is four times the sum and twice the product of its digits. Find the number
4. A two digit number is such that the product of its digits is 14. When 45 is added to the number, the digits interchange their places. Find the number.

कक्षा - 10 (हिंदी)

ग्रीष्म - अवकाश गृह कार्य

पाठ्यपुस्तक आधारित कार्य (क्षितिज /कृतिका):

पाठ का सार लेखनः कम से कम 4 अध्यायों का सारांश 100-150 शब्दों में लिखें।

पाठ से प्रश्न उत्तरः प्रत्येक अध्याय के अंत में दिए गए प्रश्नों के उत्तर अभ्यास करें।

रचनात्मक लेखनः

रचना के आधार पर वाक्य भेद की परिभाषा लिखते हुए उनके भेद बताओ और प्रत्येक के 10 -10 उदाहरण दीजिए।

वाच्य की परिभाषा लिखते हुए उनके भेद बताइए और प्रत्येक के 5-5 उदाहरण लिखो।

अनुच्छेद लेखन :

1- मेरे सपनों का भारत

2- मोबाइल का बढ़ता प्रभाव

3- पर्यावरण संरक्षण की आवश्यकता

पत्र लेखनः

1- अपने मित्र को गर्मी की छुट्टियों की योजना बताते हुए पत्र लिखें।

2- स्कूल प्राचार्य को पुस्तकालय में नई किताबें जोड़ने के लिए पत्र लिखें।

संवाद लेखनः

1- परीक्षा के बाद दो मित्रों के बीच बातचीत ।

2- एक पेड़ और एक इंसान के बीच काल्पनिक संवाद।

परियोजना कार्यः

पोस्टर बनानाः "स्वच्छ भारत अभियान" या "बेटी बचाओ, बेटी पढ़ाओ" पर एक आकर्षक पोस्टर बनाइए और नारा लिखिए।

BIOLOGY

1.Project work

Impact of lifestyle on human health .

2. Write short notes on the following topics :

A) Nutrition in humans.

B) Transportation of blood in humans.

C)Role of xylem and phloem in plants.

3) Draw and label the following diagrams:

A) Human digestive system.

B) Human excretory system.

C) Structure of the nephron.

Physics

1.Written work

Chapter: Light – Reflection and Refraction

- Q1. Define the following terms with diagrams: principal axis, focal length, center of curvature, pole, aperture.
- Q2. Draw ray diagrams for image formation by concave and convex mirrors for different positions of the object.
- Q3. Solve numericals based on the mirror formula. (At least 5 problems)
- Q4. Define the laws of refraction and explain them with the help of diagrams.
- Q5. State and explain the refractive index. Solve 3 numericals based on it.

2. Activities (To be done in A4-sized sheets)

Activity 1: Mirror Magic

- Take a plane mirror and try the “Multiple Reflections” activity by placing it in different angles with another mirror.
- Record your observations and draw the ray diagrams.
- Take photos or make sketches showing how many images were formed at various angles (e.g., 90°, 60°, etc.).

Activity 2: Refraction through Water

- Place a pencil/straw in a transparent glass of water and observe the bending of the pencil.
- Explain the phenomenon of refraction and draw labeled diagrams.
- Write a short explanation of how this experiment relates to real-life optical illusions.

3. Project Work

Option A: Periscope Model

- Make a working model of a **periscope** using mirrors and cardboard.
- Explain the principle of reflection used in the device.

- **Subject : Chemistry**

- **1.Name one natural source of each of the following acids:**
- **(i) Citric acid**
- **(ii) Oxalic acid**
- **(iii) Lactic acid**
- **(iv) Tartaric acid**
- **(v) Acetic acid**
- **2.To make chart on 'Indicators and types of indicators .**
- **3.Write the types of chemical reaction with examples.**
- **4.To read Chapter 1 & 2**
- **5. Learn Chapter 1 all notebook work**
-
- **Note:- Do Q.No 1&3 in an assignment file.**
- **Writing should be neat and clean.**

اردو

۱۔تحریر کو اچھا کرنے کے لئے روزانہ ایک نقل لکھیں (مکمل 20 نقلیں)

۲۔املا کی درستگی کے لئے گھر والوں کی مدد سے دس صفحات املا کریں۔

۳۔ذیل میں دیے گئے موضوعات میں سے کسی ایک پر تین صفحات کا مضمون لکھیں۔

(الف) اورانڈیا انٹرنیشنل اسکول اور اس کے قیام کا پس منظر

(ب) اورانڈیا انٹرنیشنل اسکول کی تعلیمی وسماجی خدمات

(ج) اورانڈیا انٹرنیشنل اسکول اور اردو زبان

(د) اورانڈیا انٹرنیشنل اسکول اور کیمپس کا ماحول

English

1. Create a mind map for the following:

(i) Theme and Characters of 1.A Letter to God 2. A dust Of Snow 3. Fire and Ice 4. A Tiger in the Zoo (Class 10).

(ii) Plot Summary of A Triumph of Surgery (Footprints Without Feet) (Class 10).

2. Creative Writing Worksheet Task:

Choose any one creative task:

• Reimagine the ending of the story "The Necklace" or "A Letter to God."

• Write a short story beginning with: "It was a cold winter night when I heard a knock on the door..."

3. Analytical Paragraph Writing (Based on Pie Charts)

Instructions:

• Study the given pie chart carefully.

• Interpret the information and trends shown.

• Write an analytical paragraph in about 120–150 words.

• Focus on comparison, contrast, and key observations.

• Use linking words like whereas, however, while, in contrast, etc.

A. Popular Means of Communication Among Students

The pie chart illustrates students' preference for various communication methods.

Mode Percentage

WhatsApp 40%

Phone Calls 25%

Emails 15%

Social Media Apps 10%

Face-to-Face 10%

➥Task: Write an analytical paragraph interpreting the chart.

B. Time Spent on Online Learning Platforms

Platform Percentage

YouTube 35%

School LMS (Google Classroom, Moodle) 30%

Educational Apps (Byju's, Toppr) 20%

E-Books 10%

Others 5%

Task: Write an analytical paragraph interpreting the chart

C. Sources of Entertainment for Teenagers

The following pie chart shows the various sources of entertainment preferred by teenagers.

Activity Percentage

Watching Movies 30%

Playing Video Games 25%

Reading Books 20%

Outdoor Sports 15%

Others 10%

➥ Task: Write an analytical paragraph based on the data.

D. Causes of Pollution in a City

The pie chart below represents the major causes of pollution in an urban area.

Cause Percentage

Vehicular Emissions 45%

Industrial Waste 25%

Domestic Waste 15%

Construction Activities 10%

Others 5%

➥ Task: Analyze the given chart and write a paragraph.

Holiday Homework

Subject :- A.I.

S.No.	Chapter's Name	Chapter No.	Activities
1	Ability to Work Independently	7	Reading chapter, MCQ, fill in the blanks, Answer the following questions.
2	Operating System	8	Reading the Chapter, MCQ, Answer the following questions.
3	Managing Files and Folders	9	Reading Chapter, MCQ, Answer the following questions
4	Care and Maintenance of a Computer, Entrepreneur and Entrepreneurship	10 11	Reading Chapter, MCQ, Answer the Following Questions & Fill in the Blanks
5	Sustainable Development	12	Reading the Chapter