



مدارس دارة السلام العالمية- الرياض

Delhi Public School – Riyadh

Summer Holiday Homework (2026-27)

Grade: X



SUBJECT: MATHEMATICS

1. Prove that $5 - 2\sqrt{3}$ is an irrational number.
2. Show that 12^n can never end with the digit 0 or 5 for any natural number n .
3. If the zeroes of the polynomial $x^2 + px + q$ are double in value to the zeroes of $2x^2 - 5x - 3$, find the value of p and q .
4. If a and b are zeroes of $px^2 - 5x + q$, then find the values of p and q , where $a + b = ab = 10$
5. Two trains each 80 m long passes each other on parallel lines. If they are going in same direction, the faster train takes one minute to pass the other completely. If they are going in opposite directions, they over take each other in three seconds. Find the speed of each train in km/hr.
6. Solve for x and y :
$$(a - b)x + (a + b)y = a^2 - 2ab - b^2$$
$$(a + b)(x + y) = a^2 + b^2$$
7. Find the roots of the quadratic equation $9x^2 - 9(a + b)x + (2a^2 + 5ab + 2b^2) = 0$.
8. Find the solution of the equation $\frac{x-1}{2x+1} + \frac{2x+1}{x-1} = \frac{5}{2}$, $x \neq \frac{-1}{2}, 1$ by factorisation method.
9. In an AP, $S_n = \frac{3n^2}{2} + \frac{5n}{2}$. Find its 25th term?
10. Which term of the sequence 53, 48, 43, is the first negative term ?
11. Find the middle term of the sequence formed by all three the- digit numbers which leave a remainder 3, when divided by 4. Also, find the sum of the numbers on both sides of the middle terms separately.
12. The sum of first six terms of an AP is 42. The ratio of its 10th term to its 30th term is 1:3. Calculate the first and the 13th term of the AP.
13. ABCD is a parallelogram. AB is divided at P and CD at Q so that AP : PB = 3:2 and CQ : QD = 4:1. If PQ meets AC at R, then prove that $AR = \frac{3}{7} AC$.
14. The diagonal BD of a parallelogram ABCD intersects the segment AE at the point F, where E is any point on the side BC, prove that $DF \times FE = BF \times FA$.
15. Two points A(1, 0) and B(-1, 0) with a variable point P(x, y) satisfy the relation $AP - BP = 1$. Show that $12x^2 - 4y^2 = 3$.
16. The line segment joining the points A(3, 2) and B(5, 1) is divided at the point P in the ratio 1:2 and it lies on the line $3x - 18y + k = 0$. Find the value of k .

17. In what ratio does the x- axis divide the line segment joining the points $(-4, -6)$ and $(-1,7)$? Find the coordinates of the point of division.
18. Find the coordinates of the center of the circle passing through the points $(0, 0)$, $(-2, 1)$ and $(-3, 2)$. Also find its radius.
19. If a, b, c are in A.P., prove that $a^2 + c^2 - 2bc = 2a(b - c)$.
20. Determine the value of k for which $x^2 + k(4x + k - 1) + 2 = 0$ has real and equal roots.

ART INTEGRATED PROJECT: TRANSFORMATIONAL GEOMETRY ART
(Design patterns using reflections, rotations and translations)

NOTE: Homework should be done on A4 size sheets. Arrange the answer sheets orderly, keep them in a folder and submit. Front page should be decorated also it should depict your name, grade and section. Kindly be adhere to the submission date i.e. 25 /08/ 2026.

SUBJECT: SOCIAL STUDIES

TOPIC: CONSUMER AWARENESS

Objectives:

1. The overall objective of the project work is to help students gain an insight and pragmatic understanding of the theme and see all the Social Science disciplines from interdisciplinary perspective. It should also help in enhancing the Life Skills of the students.
2. Students are expected to apply the Social Science concepts that they have learnt over the years in order to prepare the project report.
3. If required, students may go out for collecting data and use different primary and secondary resources to prepare the project. If possible, various forms of art may be integrated in the project work.

Topics to be covered under the project:

- Meaning of Consumer
- Concept of Consumer Protection and Common Malpractices
- Need for Consumer Protection
- Consumer Movements (Case Studies to be mentioned)
- Causes of Consumer Exploitation
- Rights of Consumers
- Responsibilities of Consumers
- Ways and Means of Consumer Protection
- COPRA

INDIVIDUAL FORMAL HANDWRITTEN REPORT

INSTRUCTIONS AND GUIDELINES TO ON HOW TO WRITE THE PROJECT:

- The other side of the paper i.e. the left side should be used for pasting pictures, newspaper cuttings etc.
- However, lines to write/pictures/watermarks/borders can be printed.
- Cover page also has to be hand written.
- You can use charts/coloured sheets/ any other paper.
- Cover page showing project title, student information, school and year.
- List of Content or Index

- Acknowledgement Preface – (In this section you may thank the people who have helped you in writing the report)
- Introduction – The Introduction should present the aim of the project and the background of investigation. It should explain why the project is important and interesting.
- Topics with suitable heading
- Planning and activities to be done during the project, if any / if required
- Conclusion – What have you understand about the project, its importance etc.
- Bibliography – This includes references to websites and books / articles consulted while writing the report. While mentioning the website - the correct web address and not just the name of the search engine should be mentioned.
- All photographs and sketches should be labelled and related to the theme.
- Question based on the project report will be asked as Viva test.

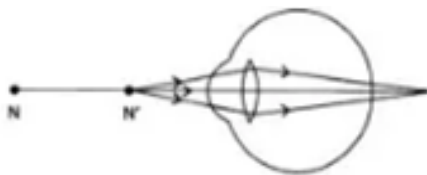
Viva test on: 06//09/2026

NOTE: Kindly be adhere to the submission date: 06//09/2026

SUBJECT: SCIENCE

PHYSICS

1. To prepare a 3D model of the human eye. Clearly label its major parts and present neatly .
2. Study the diagram given below and answer the questions that follow it:
 - (a) Which defect of vision is represented in this case ? Give reason for your answer.
 - (b) What could be the two causes of this defect?
 - (c) With the help of a diagram show how this defect can be corrected by the use of a suitable lens.



3. A student uses spectacles of focal length -2.5m .
 - a) Name the defect of vision he is suffering from.
 - b) Which lens is used for the correction of this defect?
 - c) List the two main causes of developing this defect.
 - d) Compute the power of this lens.
4. A camera in many ways is similar to the human eye, still there are some basic difference in image formation between the two. Explain.

5. Describe an activity to show that the colours of white light split by a glass prism can be recombined to get white light by another identical glass prism. Also draw ray diagram to show the recombination of the spectrum of white light.

6. Speed of light in glass is 2×10^8 m/s and its refractive index is 1.5. What is the speed of light in medium whose refractive index is $\frac{4}{3}$.

7. Under what conditions will a glass lens placed in a transparent liquid becomes invisible?

8. With a help of a ray diagram, state the meaning of refraction of light. State Snell's law of refraction of light and also express it mathematically.

CHEMISTRY

1. (a) A compound 'A' is used in soda-lime fire-extinguisher and decomposes on heating to form compound 'B'. Compound 'B' is used for removing permanent hardness of water. Identify 'A' and 'B'.

(b) Write chemical formula of Plaster of Paris. At what temperature gypsum is heated to obtain Plaster of Paris?

2. Account for the following:

(a) White silver chloride turns grey when exposed to sunlight.

(b) Lead (II) nitrate on heating releases brown fumes.

3. The pH plays an important role in our daily life. Strength of acids and bases depends on the number of H^+ ions and OH^- ions produced by these respectively. pH scale helps in predicting the strength of acids and bases by measuring hydrogen ion concentration in a solution.

Answer the following:

(a) What type of indicator is used to predict how strong an acid or base is?

(b) Three solutions A, B and C showed pH as 3, 5 and 7. Which solution has the highest concentration of H^+ ions?

(c) What are strong acids and weak acids?

(d) Under what condition is rainwater called acid rain?

(e) In the following acids, identify weak acids:

Nitric acid, hydrochloric acid, acetic acid, sulphuric acid, formic acid.

4. How is a universal indicator obtained? How is the wide range of pH of solution tested by it?

5. What happens when

(i) Calcium carbonate is heated?

(ii) Silver bromide is exposed to sunlight?

(iii) Lead is added to copper (II) chloride solution?

Write balanced chemical equations of the reactions involved in support of your answer.

6. (a) Give the chemical name and formula of Plaster of Paris.

(b) Write the chemical equation of its preparation.

(c) Give any two uses of it.

7. (a) Name the acid present in ant's sting.

(b) Give reason:

(i) While diluting an acid, it is recommended that the acid should be added to water.

(ii) Baking soda is used as an antacid.

8. Give reasons:

(i) Silver chloride is stored in dark coloured bottles.

(ii) Respiration is an exothermic reaction.

(iii) For dilution of an acid, acid is added into water and not water into acid.

(iv) Dry HCl gas does not turn blue litmus red whereas dilute hydrochloric acid does.

(v) Blue colour of Copper(II) sulphate crystals turns white on heating.

9. Write the preparation of the following compounds with balanced chemical equation:

(i) NaOH by chlor-alkali process

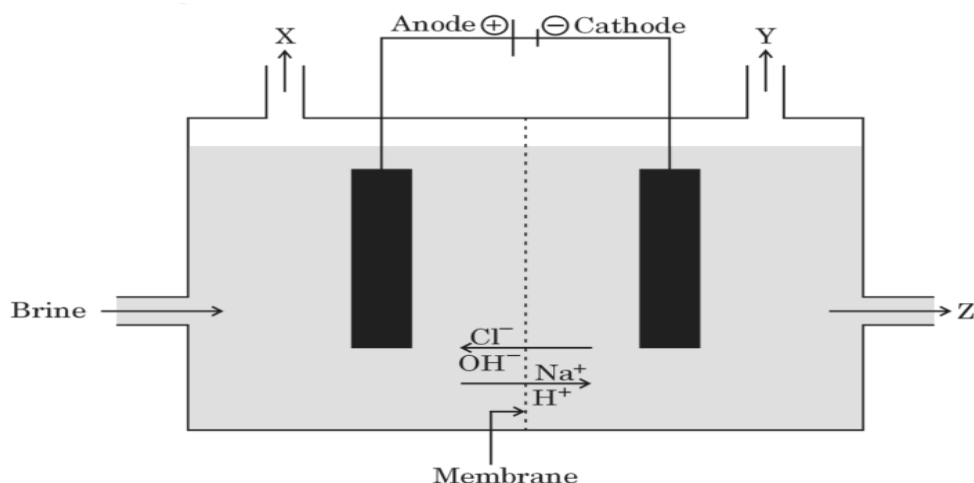
(ii) Baking Soda

(iii) Washing soda

10. Read the following passage and answer the questions that follow:

In the given diagram, when electricity is passed through an aqueous solution of a common salt, a substance 'Z' is produced, along with the evolution of gases 'X' and 'Y'.

When a burning matchstick is brought near the gas 'Y', it burns with a pop sound, whereas 'X' is used for disinfecting drinking water. When 'X' is passed through slaked lime, an insoluble substance 'A' is produced.



- (a) Write the names of the gases 'X' and 'Y'.
- (b) Write the balanced chemical equation for the formation of substance 'Z'.
- (c) What happens :
- (i) If a drop of red litmus solution is added to the aqueous solution of substance 'Z' ?
- (ii) If CO_2 gas is passed through ammoniacal solution of aqueous NaCl ?
- (d) Identify the substance 'A' and write the balanced chemical equation of the reaction which takes place in its preparation.

BIOLOGY

Complete the NCERT Exercise Question and Answers from chapter Control and Coordination.

SUBJECT: ENGLISH

“Reading makes a full man, writing an exact man, and speaking a confident man.” – Francis Bacon

1. Reading

A. Book Reading & Book Review with an impressive handmade book cover

Read any one of the following books:

1. Wonder — R. J. Palacio
2. Wings of Fire — Dr. A. P. J. Abdul Kalam and Arun Tiwari
3. The Boy in the Striped Pyjamas — John Boyne
4. I am Malala - Malala Yousafzai

Book Review must include:

- Title of the book
- Author's name
- Genre
- Brief summary
- Main characters
- Favorite character and why
- Important themes/messages
- Your opinion and rating

B. PowerPoint Presentation on the Same Book (8–10 slides)

Suggested Slides:

1. Title Slide
2. Author Introduction
3. About the Book
4. Main Characters
5. Plot Summary
6. Themes and Message
7. Favorite Scene
8. What I Learnt
9. Book Rating
10. Thank You

2. Art-Integrated Project

A. "The Proposal" (Handmade)

Create a comic strip depicting the humorous events of the play.

OR

B. Tourist Destination Pamphlet (Handmade)

Include:

- Location
- Major attractions
- Best time to visit
- Local cuisine

- Travel tips
- Slogans
- Pictures and illustrations

3. Letters to the Editor

- A. Excessive mobile phone use during school breaks affecting students.
- B. Examination stress among students: causes and solutions.
- C. Road safety violations leading to accidents; suggest measures.

SUBJECT: SECOND LANGUAGE

HINDI:

- 1- कबीर की किन्हीं दो साखियों को चुनकर सुंदर सुलेख (Calligraphy) में लिखें और उस दोहे के केंद्रीय भाव (जैसे- मीठी वाणी, अहंकार का त्याग) को दर्शाने वाला एक कागज-कोलाज (Collage Art) चित्र या पेंटिंग बनाएँ।
- 2- हरिहर काका कहानी को 6-8 मुख्य दृश्यों (Scenes) में बाँटकर एक कॉमिक स्ट्रिप (Comic Strip) या चित्रकथा तैयार कीजिए।

URDU:

۱۔ مرزا غالب اور میر تقی میر کے پانچ پانچ اشعار ایک چارٹ پر خوش خط لکھیے۔

۲۔ درخواستیں

پر نسیل کے نام (، سیکشن تبدیلی کے لیے، فیس معافی)

۳۔ خطوط

بھائی کے نام (پڑھائی کی نصیحت کے لیے)

دوست کے نام (چھٹیاں ساتھ گزارنے کے لیے)

۴۔ مضامین (200 الفاظ پر مشتمل)

کسی کھیل یا میلے کا آنکھوں دیکھا حال

صحت اور کھیل کود

ARABIC :

1. اكتب موضوعاً (125-150 كلمة) عن أحد الموضوعات التالية:

○ أهمية القراءة

○ حماية البيئة

○ دور التكنولوجيا في التعليم

2. اكتب رسالة رسمية إلى مدير المدرسة تقترح فيها إقامة معرض للكتاب.

3. اكتب حواراً من 12-15 سطرًا بين طالبين حول "استخدام الهاتف المحمول في التعليم".

4. اقرأ مقالاً عربياً من صحيفة أو مجلة واكتب:

○ عنوان المقال

○ ملخصاً (100 كلمة)

○ خمس كلمات جديدة مع معانيها

5. أعد مشروعاً صغيراً بعنوان:

"المملكة العربية السعودية: الثقافة والتطور"

(صفحتان مع صور مناسبة)

TAMIL :

1. திருக்குறளில் உள்ள அனைத்து மனப்பாடம் எழுதி வரவும்

2. செய்யுள் இடம் பெற்ற பாடம் மற்றும் பாடலை எழுதிய ஆசிரியர் பெயர்கள் எழுதி வரவும் (example - பாடல் - அன்னை மொழியே - அன்னை மொழியே பாடலை எழுதிய ஆசிரியர் பெயர் - பாவலரேறுபெருஞ்சித்தனார் (இயல் -1 to 7 வரை)

MALYALAM :

1. സൃഷ്ടിപരമായ എഴുത്ത്

* എന്റെ സ്വപ്നലോകം

* പരിസ്ഥിതി സംരക്ഷണം

* ഒരു മറക്കാനാവാത്ത യാത്ര

എന്നീ വിഷയങ്ങളിൽ ഒരു ലേഖനം/കഥ എഴുതുക.

2. കവിതാസ്വാദനം

ഇഷ്ടപ്പെട്ട ഒരു മലയാളം കവിത തിരഞ്ഞെടുക്കുക.

* കവിത എഴുതുക.

* കവിയെ പരിചയപ്പെടുത്തുക.

* കവിതയുടെ ആശയം സ്വന്തം വാക്കുകളിൽ എഴുതുക.

* കവിതയുമായി ബന്ധപ്പെട്ട ഒരു ചിത്രം വരയ്ക്കുക.

3. അഭിമുഖം (Interview)

വീട്ടിലെ മുതിർന്ന ഒരാളോട് അഭിമുഖം നടത്തുക.

ഉദാഹരണ ചോദ്യങ്ങൾ:

- * നിങ്ങളുടെ ബാല്യകാലം എങ്ങനെയായിരുന്നു?
- * നിങ്ങൾക്ക് ഏറ്റവും ഇഷ്ടപ്പെട്ട പുസ്തകം ഏത്?
- * ഇന്നത്തെ കുട്ടികൾക്ക് നൽകാനുള്ള സന്ദേശം എന്താണ്?

ഉത്തരങ്ങൾ രേഖപ്പെടുത്തുക.

FRENCH :

I-Donnez l'adjectif du :

- a- jour
- b- semaine
- c- mois.....
- d- année :.....

II- Donnez la forme nominale des verbes suivants :

- Arriver =
- Entrer =
- Sortir =
- Étudier =
- S'intéresser =
- Soulager =
- Partir =
- Consommer =
- Encourager =
- Acheter =

III- Mettez ces pronoms relatifs dans des phrases:

a- Lequel:

.....

b- Laquelle:

.....

c- Lesquels:

.....

d- Lesquelles:

.....

IV-Mettez les pronoms : qui/que/ ou/ dont, dans des phrases.

a- Qui

.....

b- Que

.....

c- Ou

.....

d- Dont.....

V- Conjuguez ces verbes au plus que parfait :

1/ être

Je	Nous
Tu	Vous
Il	Ils
Elle	Elle

2/ avoir

Je	Nous
Tu	Vous
Il	Ils
Elle	Elle

.....

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