

KRISHNA INTERNATIONAL SCHOOL, ALIGARH
HOLIDAY HOMEWORK-2017-2018
(WINTER VACATION)
CLASS – X

S. No.	SUBJECT	HOLIDAY HOMEWORK
1	HINDI	1. अपनी कक्षा कार्य पुस्तिका में किन्हीं चार देशों के 4 प्रतीकों के नाम लिखकर उनके बारे में 4-4 पंक्तियाँ कहें।
2	ENGLISH	1. Read the novel 'THE STORY OF MY LIFE' * Choose 10 incidents that you like and rewrite them in your own words. * Write the character sketch of Miss Sullivan. 2. Select any two poems from the syllabus and highlight the presence of literary devices. (Do this work in a thin notebook.)
3	SCIENCE	Bio- Prepare the notes of Ch-9 and update your lab manual for term II. Chem- Prepare the notes of Ch-4 and update your lab manual for term II. Phy- Prepare the notes of Ch-5.
4	SOCIAL SCIENCE	a) Make a project on any three popular struggles that have taken place in India. Also describe the role of various pressure groups and movements in these struggles. b) Learn and revise all the chapters completed in class.

5. MATHS

Solve the following problems in your class work copy.

Q1. If n is an odd positive integer, show that $(n^2 - 1)$ divisible by 8.

Q2. If α and β are the zeroes of the polynomial $6y^2 - 7y + 2$, find a quadratic polynomial whose zeroes are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$.

Q3. Solve the following pair of the linear equation:

$$152x - 378y = -74$$

$$-378x + 152y = -604$$

Q4. If $a \cos \theta - b \sin \theta = c$, prove that $a \sin \theta + b \cos \theta = \pm \sqrt{a^2 + b^2 - c^2}$.

Q5. Solve the following quadratic equation:

$$9x^2 - 9(a + b)x + [2a^2 + 5ab + 2b^2] = 0$$

Q6. If S_n denotes the sum of the first n terms of an AP, prove that $S_{30} = 3(S_{20} - S_{10})$.

Q7. For which values of a and b does the following pair of linear equations have an infinite number of solutions?

$$2x + 3y = 7$$

$$(a - b)x + (a + b)y = 3a + b - 2$$

Q8. If the point $P(x, y)$ is equidistant from the points $A(a + b, b - a)$ and $B(a - b, a + b)$.

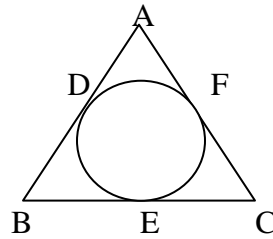
Prove that $bx = ay$.

Q9. State and prove Basic Proportionality Theorem.

Q10. In an equilateral triangle ABC, D is a point on side BC such that $BD = \frac{1}{3} BC$. Prove that $9AD^2 = 7AB^2$

Q11. Two poles of height a metres and b metres are p metres 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 $\frac{ab}{a+b}$ metres.

Q12. In figure, if $AB = AC$ prove that $BE = EC$.



Q13. Prove that $\frac{\cos A - \sin A + 1}{\cos A + \sin A - 1} = \operatorname{cosec} A + \cot A$

Q14. If $\tan \theta + \sin \theta = m$ and $\tan \theta - \sin \theta = n$, show that $(m^2 - n^2) = 4\sqrt{mn}$.

Q15. A spherical balloon of radius r subtends an angle θ at the eye of an observer. If the angle of elevation of its centre is ϕ , find the height of the centre of the balloon.