

KENDRIYA VIDYALAYA NAD VISAKHAPATNAM

Class X Mathematics Summer Vacation (03.05.17 to 21.06.17) Home Assignment  
PRACTICE MAKES A HUMAN BEING PERFECT. FEEL CONFIDENT IN LEARNING MATHEMATICS.

1. Write all Mensuration formulae.
2. Write all algebraic identities with one example each.
3. Construct the following angles using ruler and compasses:  
 $90^\circ$ ,  $45^\circ$ ,  $60^\circ$ ,  $30^\circ$ ,  $135^\circ$ ,  $120^\circ$ ,  $75^\circ$ . Draw one figure for each angle. (Need not write steps of construction)
4. Draw a Cartesian plane on a graph paper and represent the following points:  
A(0,5), B(4,0), C(-1,5), D(2,-3), E(0,0), F(-6,-4), G(-4,6)
5. Explain Congruency of triangles using one pair of figure for each.
6. Factorise the following :-  
i)  $x^2 - 3x - 10$ , ii)  $2x^2 + x - 6$ , iii)  $100x^2 - 20x + 1$ , iv)  $x^4 + x^2y^2 + y^4$ , v)  $m^2 + 2mn + n^2$   
vi)  $x^4 - y^4$ , vii)  $25x^2 + 40xy + 16y^2$

KV NAD, VISAKHAPATNAM 2017-2018 CLASS X MATHEMATICS  
2017, APRIL Month SELF ASSESSMENT TEST REAL NUMBERS CHAPTER

Time Allowed: 2 hours

Maximum Marks: 40

SECTION A (5 questions of 1mark each)

- Q1. State the fundamental theorem of Arithmetic.
- Q2. The HCF and LCM of two positive integers are 'h' and 'l' respectively. If one integer is 'a', find the other integer.
- Q3. Write the prime factorization of 156.
- Q4. Write the LCM of smallest composite number and the smallest prime number.
- Q5. Express 0.104 in the form  $\frac{p}{q}$  and simplify.

SECTION B (6 questions of 2mark each)

- Q6. Show that  $5 + \sqrt{2}$  is an irrational number.
- Q7. Use Euclid's division algorithm to find the HCF of 867 and 255.
- Q8. Find the LCM of 72 and 120 by prime factorization method.
- Q9. Find the HCF of 306 and 657 by prime factorization method.
- Q10. Check whether  $14^n$  can end with the digit zero for any natural number n.
- Q11. State Euclid's Division Lemma.

SECTION C (5 questions of 3mark each)

- Q12. Express  $\frac{35}{400}$  in to an equivalent rational number of the form  $\frac{a}{b}$  where b is a power of 10 and write its decimal expansion.
- Q13. Prove that  $\sqrt{2}$  is an irrational number.
- Q14. Find the LCM of 2520 and 10530 by prime factorization method.
- Q15. Show that square of any positive integer is either of the form  $3m$  or  $3m + 1$  for some integer m
- Q16. Find the HCF and LCM of 6, 72 and 120 using prime factorization method.

SECTION D (2 questions of 4mark each)

- Q17. Show that any positive odd integer is of the form  $4q + 1$  or  $4q + 3$  where q is a positive integer.
- Q18. Prove that  $\sqrt{2} + \sqrt{3}$  is irrational number.

Atishmantra

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