

**AIRPORT SCHOOL, AHMEDABAD**  
**HOLIDAY HOMEWORK 2018 – 19**  
**CLASS: X**  
**SUBJECT: MATHEMATICS**

**Solve the following questions:**

1. Use Euclid's Division Algorithm to find the HCF of the 504 and 980.
2. The HCF of 65 and 117 is expressible in the form  $65m - 117$ . Find the value of  $m$  and also find the LCM of 65 and 117 using prime factorization method.
3. Prove that  $\sqrt{2} - 3\sqrt{5}$  is an irrational number.
4. Show that the square of any positive integers cannot be of the form  $5q + 2$  or  $5q + 3$  for any integer  $q$ .
5. Show that  $12^n$  can not end with the digits 0 and 5 for any natural number  $n$ .
6. Use Euclid's Division Algorithm to find the HCF of 441, 567 and 693.
7. Using Euclid's Division Algorithm find the largest number that divided 1251, 9377 and 15628 leaving remainders 1, 2 and 3 respectively
8. On a morning walk three persons step off together and their steps measure 40cm, 42cm, and 45cm respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps?
9. In a seminar, the number of participants in Hindi, English and mathematics are 60, 84 and 108 respectively. Find the minimum numbers of rooms required if in each room the same number of participants is to be seated and all of them being in the same subjects.
10. 560 students of a school have to walk behind a group of 32 teachers of a school in a march against corruption. The two groups are to march in the same number of columns.
  - a. What is the maximum numbers of columns in which they can march?
  - b. Which value is depicted by the students and teachers of the school by marching out against corruption?
  - c. Which mathematical concept is used in the above problem?
11. Define Zero of a polynomial. How many zeroes a linear and a quadratic polynomial can have? Why? Explain.
12. If the  $x$  and  $y$  are the zeroes of the polynomial  $p(m) = 2m^2 - 7m + 3$ , then find the value of
  - (1)  $\frac{1}{x} + \frac{1}{y}$
  - (2)  $x^2 + y^2$
13. find a quadratic polynomial with zeroes  $3 + \sqrt{2}$  and  $3 - \sqrt{2}$
14. Obtain all the zeros of the polynomial  $x^4 + x^3 - 16x^2 - 4x + 48$ , if two of its zeroes are 2 and -4.
15. For which values of  $a$  and  $b$ , are the zeroes of  $q(x) = x^3 + 2x^2 + a$  also the zeroes of the polynomial  $p(x) = x^5 - x^4 - 4x^3 + 3x^2 + 3x + b$ ? Which zeroes of  $p(x)$  are not the zeroes of  $q(x)$ ?