

# RADHAKRISHNAN VIDYALAYA

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## HOLIDAY HOME WORK 2019-2020

**Class: X**

**Subject : Mathematics**

- 1) Find HCF of the numbers 1405, 1465 and 1530 by Euclid's division algorithm.
- 2) If HCF of 65 and 117 is expressible in the form  $65n - 117$ , then find the value of  $n$ .
- 3) Use Euclid's division lemma to show that the square of any positive integer is either of the form  $3m$  or  $3m + 1$  for some integer  $m$ .
- 4) On a morning walk, three persons step out together and their steps measure 30 cm, 36 cm and 40 cm respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps?
- 5) Three tankers contain 187 L, 231 L and 275 L of petrol respectively. Using Euclid's division algorithm, find the capacity of the largest container that can measure the petrol of the three containers exact number of times.
- 6) Check whether  $8^n$  can end with the digit 0 for any natural number  $n$ .
- 7) Find the largest number which on dividing 1251, 9377 and 15628 leaves remainders 1, 2 and 3 respectively.
- 8) Prove that  $\sqrt{5}$  is an irrational number.
- 9) Find after how many places of decimal the decimal form of the number  $2\frac{3}{4} \cdot 5\frac{1}{2} \cdot 3\frac{1}{2}$  will terminate.
- 10) Express 429 as a product of its prime factors.
- 11) Find the quadratic polynomial, the sum and product of whose zeroes are -3 and 5 respectively.
- 12) What should be added to the polynomial  $x^2 - 5x + 4$ , so that 3 is the zero of the polynomial?
- 13) If one zero of the polynomial  $2x^2 - 5x - (2k + 1)$  is twice the other, find both the zeroes of the polynomial and the value of  $k$ .
- 14) For what value of  $x$  both the polynomials  $x^2 - 3x + 2$  and  $x^2 - 6x + 5$  becomes zero?
- 15) Find all the zeroes of the polynomial  $2x^4 - 9x^3 + 5x^2 + 3x - 1$ , if two of its zeroes are  $2 + \sqrt{5}$  and  $2 - \sqrt{5}$ .
- 16) Check whether  $g(x)$  is a factor of  $p(x)$  by dividing polynomial  $p(x)$  by polynomial  $g(x)$ , where  $p(x) = x^5 - 4x^3 + x^2 + 3x + 1$ ,  $g(x) = x^3 - 3x + 1$ .
- 17) Draw the graphs of the following equations:  
 $X + y = 7$ ,  $2x - 3y = 9$ .  
  
Determine the coordinates of the vertices of the triangle formed by these lines and  $y$  - axis. Also, shade the triangular region. Using this graph, find the values of  $x$  and  $y$  which satisfy both the equations.
- 18) For what value of  $k$ , does the pair of equations given below has a unique solution?  
 $2x + ky = 6$ ,  $4x + 6y = 0$ .
- 19) Solve the following pair of equations:  
 $49x + 51y = 499$ ,  $51x + 49y = 501$ .
- 20) Solve the following pair of linear equations :  $3x - 5y = 4$ ,  $2y + 7 = 9x$