REAL NUMBER (ASSIGMENT – 1)

1. What do you mean by Euclid's division lemma?
2. A number when divided by 73 gives 34 as quotient and 23 as remainder. Find the number.
3. By what number should 1365 be divided to get 31 as quotient and 32 as remainder?
4. Using Euclid's division algorithm, find the HCF of
   (i) 405 and 2520 (ii) 272 and 1032 (iii) 196 and 38220
5. Show that any positive odd integer is of the form (6m+1) or (6m+3) or (6m+5) , where m is some integer.
6. Show that any positive odd integer is of the form (4m+1) or (4m+3), where m is some integer.
7. Show that every positive integer is either even or odd.
8. Prove that if x and y are both odd positive integers then $x^2 + y^2$ is even but not divisible by 4.
9. Use Euclid's algorithm to find HCF of 1190 and 1445. Express the HCF in the form 1190m + 1445n.
10. Use Euclid's algorithm to find HCF of 1651 and 2032. Express the HCF in the form of 1651m + 2032n.
11. Using Euclid's division lemma, show that the square of any positive integer is either of the form 3m or (3m+1) for some integer m.

12. Prove that the product of two consecutive positive integers is divisible by 2.
13. If a and b are two odd positive integers such that a > b, then prove that one of the two numbers (a + b)/2 and (a – b)/2 is odd and other is even.
14. Use Euclid's division lemma to show that the cube of any positive integer is of the form 9m, 9m+1 and 9m+8.
15. For any positive integer n, prove that n^3-n is divisible by 6.

ANSWER

2. 2505 3. 43 4.(i) 45 (ii)

4. 85; m =-6; n=5 10. 127; m = 5; n=-4