Latex assignment

1. The ratio of HCF to LCM of the least composite number and the least prime number is :

   (a) $1 : 2$

   (b) $2 : 1$

   (c) $1 : 1$

   (d) $1 : 3$

2. The next term of the A.P.: $\sqrt{7},\ \sqrt{28},\ \sqrt{63}$ is :

   (a) $\sqrt{70}$

   (b) $\sqrt{80}$

   (c) $\sqrt{97}$

   (d) $\sqrt{112}$

3. Two numbers are in the ratio $2 : 3$ and their LCM is 180. what is the HCF of these numbers ?

4. How many terms are there in A.P whose first and fifth term are - 14 and 2, respectively and the last term is 62.

5. Which term of the A.P.:65, 61, 57, 53, ... is the first negative term ?

6. Prove that $\sqrt{5}$ is an irrational number.

7. If p and q are natural numbers and p is the multiple of q, then what is the HCF of p and q ?

   (a) pq

   (b) p

   (c) q

   (d) $p + q$

8. Prove that $2 + \sqrt{3}$ is an irrational number, given that $\sqrt{3}$ is an irrational number.

9. Find by prime factorisation the LCM of the numbers 18180 and 7575. Also, find the HCF of the two numbers

10. Three bells ring at intervals of 6, 12 and 18 minutes. If all the three bells rang at 6 a.m., when will they ring together again ?

11. How many terms of the arithmetic progression 45, 39, 33, ... must be taken so that their sum is 180 ? Explain the double answer.

12. If $p - 1$, $p + 1$ and $2p + 3$ are in A.P., then the value of p is

   (a) -2
   (b) 4
   (c) 0
   (d) 2

13. Assertion (A): The perimeter of $\triangle ABC$ is a rational number.
    Reason (R): The sum of the squares of two rational numbers is always rational.
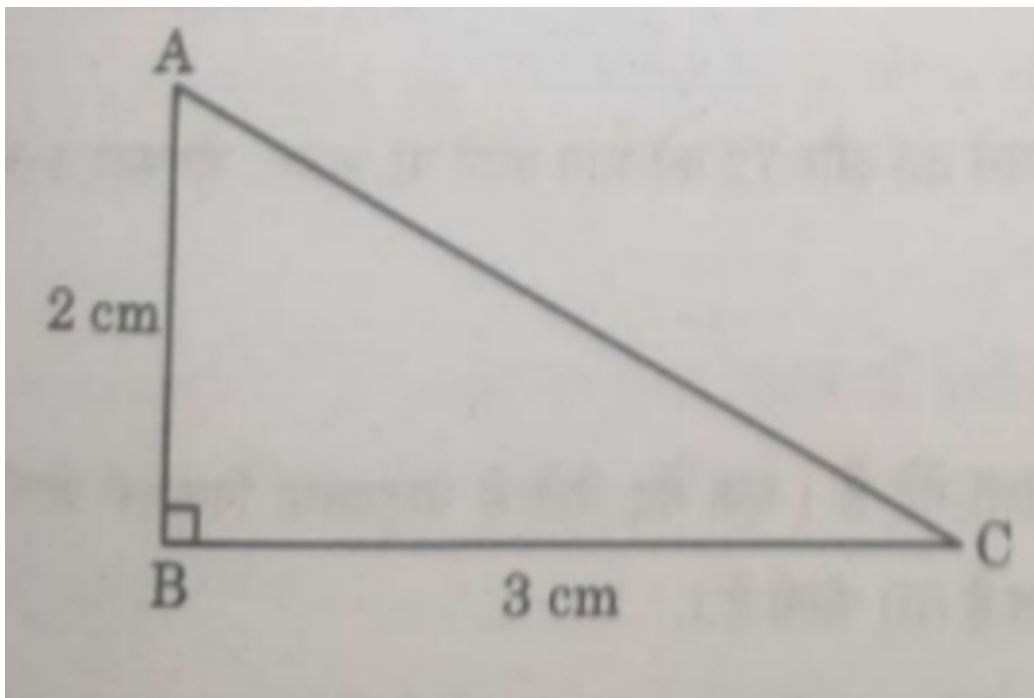

Figure 1: $\triangle ABC$

14. Find the greatest number which divides 85 and 72 leaving remainders 1 and 2 respectively.

15. Prove that $\sqrt{5}$ is an irrational number.

16. The ratio of the 11th term to 17th term of an A.P. is 3 : 4. Find the ratio of 5th to 21th of the same A.P. Also, find the ratio of the sum of first 5 terms to that of first 21 terms

17. 250 logs are stacked in the following manner:
    22 logs in the bottom row , 21 in the next row, 20 in the row next to it and so on(as shown by an example). In how many, are the 250 logs placed and how many logs are there in top row ?
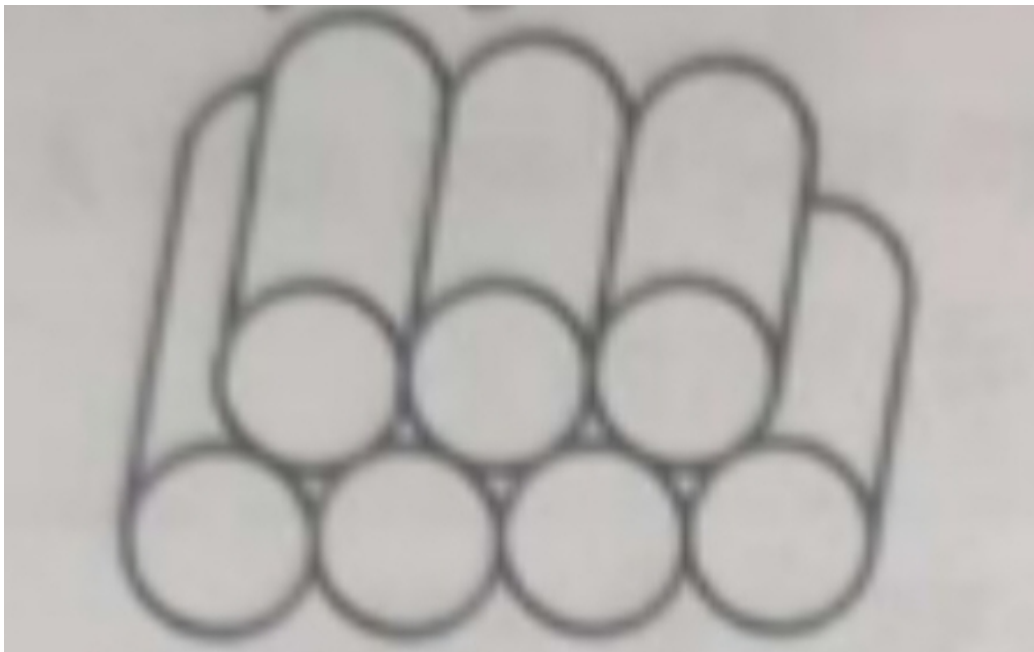

Figure 2: Pile of logs