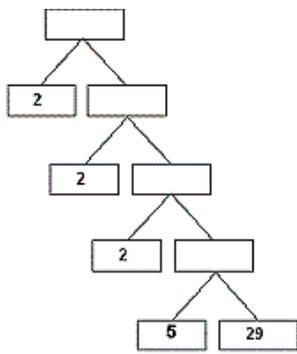


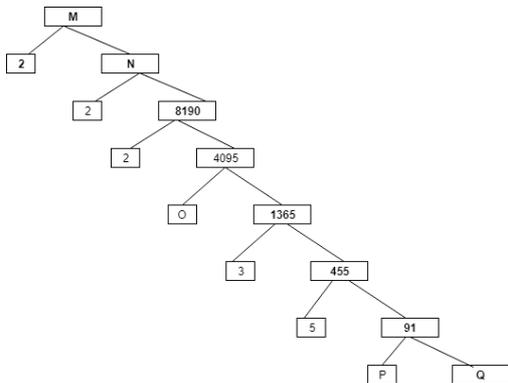
**REAL NUMBERS WS 2**

**Class 10 - Mathematics**

1. Two tankers contain 850 litres and 680 litres of petrol respectively. Find the maximum capacity of a container which can measure the petrol of either tanker in exact number of times. (In litres) [2]
2. Find the HCF of 6265 and 76254. [2]
3. Find the largest number which divides 438 and 606 leaving remainder 6 in each case. [2]
4. 2002 cartons of Lassi bottles and 2618 cartons of Frooti are to be stacked in a storeroom. If each stack is of the same height and is to contain cartons of the same type of bottles, what would be the greatest number of cartons each stack would have? [2]
5. The product of two numbers is  $396 \times 576$  and their LCM is 6336. Find their HCF. [2]
6. 4 Bells toll together at 9.00 am. They toll after 7, 8, 11 and 12 seconds respectively. How many times will they toll together again in the next 3 hours? [2]
7. Find the largest four-digit number which when divided by 4, 7 and 13 leaves a remainder 3 in each case. [2]
8. Find the greatest number of 6 digits exactly divisible by 24, 15 and 36. [2]
9. Find the HCF of 1,656 and 4,025 by Euclid's division algorithm. [2]
10. What is the least number which should be added to 2497 so that the sum is exactly divisible by 5, 6, 4 and 3? [2]
11. Find LCM of 126 and 156 using prime factorisation method. [2]
12. If  $d = \text{HCF of } 48 \text{ and } 72$ , find the value of  $d$ . [2]
13. Define HCF of two positive integers and find the HCF of the pair of numbers: 105 and 120. [2]
14. Find the largest number which divides 438 and 606 leaving remainder 6 in each case. [2]
15. An army contingent of 612 members is to march behind an army band of 48 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march? [2]
16. Find by prime factorisation the LCM of the numbers 18180 and 7575. Also, find the HCF of the two numbers. [2]
17. Define HCF of two positive integers and find the HCF of the pair of numbers: 100 and 190. [2]
18. If the HCF of 408 and 1032 is expressible in the form  $1032m - 408 \times 5$ , find  $m$ . [2]
19. Find the HCF and LCM of 6, 72 and 120 using fundamental theorem of arithmetic. [2]
20. Find the largest positive integer that will divide 122,150 and 115 leaving remainders 5, 7, 11 respectively. [2]
21. Explain why  $(7 \times 9 \times 13 \times 15 + 15 \times 14)$  is a composite number. [2]
22. Define HCF of two positive integers and find the HCF of the pair of numbers: 240 and 6552. [2]
23. What is the least number which should be added to 2497 so that the sum is exactly divisible by 5, 6, 4 and 3? [2]
24. Find the missing numbers in the following factorization: [2]



25. Find the largest four-digit number which when divided by 4, 7 and 13 leaves a remainder 3 in each case. [2]
26. Three pieces of timber 42 m, 49 m and 63 m long have to be divided into the planks of the same length. What is the greatest possible length of each plank ? Also find number of planks formed. [2]
27. Given that HCF of two numbers is 23 and their LCM is 1449. If one of the numbers is 161, find the other. [2]
28. Express the HCF of 234 and 111 as  $234x + 111y$ , where x and y are integers. [2]
29. Write down the LCM of the following polynomials:  $(x-1)(x-2)$  and  $(x-2)(x-7)$  [2]
30. Find the LCM and HCF of the pairs of integers 336 and 54 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ . [2]
31. Find the prime factors of 7650 using the factor tree. [2]
32. Complete the factor-tree and find the composite number M. [2]



33. If the prime factorization of 2520 is expressible as  $2^3 \times 3^p \times q \times 7$ , then find the values of p and q. [2]
34. The difference of the square of two numbers is 45. The square of the smaller number is 4 times the larger number. Find the number. [2]
35. Find the LCM and HCF of two numbers 26 and 91 by the method of prime factorization. [2]
36. Prove that  $4 + \sqrt{2}$  is irrational. [2]
37. Find the HCF of 1001 and 385. [2]
38. Find the least number which when divided by 12, 16 and 24 leaves remainder 7 in each case. [2]
39. Find HCF of 44, 96 and 404 by prime factorization method. Hence find their LCM. [2]
40. Find the HCF and LCM of 26, 65 and 117, using prime factorisation. [2]
41. Find the LCM of the following polynomials:  $22x(x+1)^2$  and  $36x^2(2x^2+3x+1)$  [2]
42. There is a circular path around a sports field. Sonia takes 18 minutes to drive one round of the field, while Ravi takes 12 minutes for the same. Suppose they both start at the same point and at the same time, and go in the same direction. After how many minutes will they meet again at the starting point? [2]
43. Find the LCM and HCF of the pairs of integers 510 and 92 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ . [2]
44. Find the smallest number which when increased by 17 is exactly divisible by both 520 and 468. [2]
45. Find the HCF of 96 and 404 by prime factorisation method. Hence, find their LCM. [2]

46. Find the LCM and HCF of 92 and 510, using prime factorisation. [2]
47. Define HCF of two positive integers and find the HCF of the pair of numbers: 70 and 30. [2]
48. Two tanks contain 504 and 735 liters of milk. Find the capacity of a container which can measure the milk of either tank in exact number of times [2]
49. Can two numbers have 15 as their HCF and 175 as their LCM ? Give reasons. [2]
50. Explain why  $3 \times 5 \times 7 + 7$  is a composite number. [2]
51. Find the HCF and LCM of 108, 120 and 252 using prime factorisation method. [2]
52. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they change simultaneously at 7 a.m., at what time will they change together next? [2]
53. Find the HCF of the following polynomials:  $2x^4 - 2y^4$  and  $3x^3 + 6x^2y - 3xy^2 - 6y^3$  [2]
54. The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number. [2]
55. 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? [2]
56. Find the largest number which divides 245 and 1037, leaving remainder 5 in each case. [2]
57. Find pairs of natural numbers whose least common multiple is 78 and the greatest divisor is 13. [2]
58. Find the HCF of 1288 and 575 and express it as a linear combination of them. [2]
59. What is the smallest number which when divided by 20, 25, 35 and 40 leaves a remainder of 14, 19, 29 and 34 respectively. [2]
60. Define a prime number and a composite number. Hence explain why  $7 \times 11 \times 13 + 13$  is a composite number. [2]
61. Show that  $n^2 - 1$  is divisible by 8, if n is an odd positive integer. [2]
62. Find the LCM and HCF of the integers 12, 15 and 21 by applying the prime factorisation method. [2]
63. 2002 cartons of Lassi bottles and 2618 cartons of Frooti are to be stacked in a storeroom. If each stack is of the same height and is to contain cartons of the same type of bottles, what would be the greatest number of cartons each stack would have? [2]
64. Given that  $\text{HCF}(306, 1314) = 18$ . Find  $\text{LCM}(306, 1314)$ . [2]
65. Show that the square of any positive integer is either of form  $3m$  or  $3m + 1$  for some integer m. [2]
66. Find the greatest number which divides 85 and 72 leaving remainder 1 and 2 respectively. [2]
67. Find HCF and LCM of 18 and 24 by the prime factorization method. [2]
68. Find the LCM and HCF of integers 8, 9 and 25 by applying the prime factorisation method. [2]
69. A sweet seller has 420 kaju burfis and 150 badam burfis. He wants to stack them in such a way that each stack has the same number, and they take up the least area of the tray. Find number of kaju burfis and badam burfis that were placed in each stack and also find number of stacks formed [2]
70. Find the HCF and LCM of 90 and 144 by the method of prime factorization. [2]
71. Find the LCM and HCF of the integers: 40, 36 and 126 by applying the prime factorization method. [2]
72. An electronic device makes a beep after every 60 seconds. Another device makes a beep after every 62 seconds. They beeped together at 10 a.m. At what time will they beep together at the earliest? [2]
73. Find the LCM and HCF of 120 and 144 by fundamental theorem of arithmetic. [2]
74. Find the LCM and HCF of the pairs of integers 26 and 91 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ . [2]
75. Find HCF of 81445 and 687897. [2]