

1. Express 140 as a product of its prime factors
2. Find the LCM and HCF of 12, 15 and 21 by the prime factorization method.
3. Find the LCM and HCF of 6 and 20 by the prime factorization method.
4. State whether  $\frac{13}{3125}$  will have a terminating decimal expansion or a non-terminating repeating decimal.
5. State whether  $\frac{17}{8}$  will have a terminating decimal expansion or a non-terminating repeating decimal.
6. Find the LCM and HCF of 26 and 91 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ .
7. Use Euclid's division algorithm to find the HCF of 135 and 225
8. 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  $m$
9. Prove that  $\sqrt{3}$  is irrational.
10. Show that  $5 - \sqrt{3}$  is irrational
11. Show that any positive odd integer is of the form  $6q + 1$ , or  $6q + 3$ , or  $6q + 5$ , where  $q$  is some integer.
12. An army contingent of 616 members is to march behind an army band of 32 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?
13. Express 156 as a product of its prime factors.
14. Find the LCM and HCF of 17, 23 and 29 by the prime factorization method.
15. Find the HCF and LCM of 12, 36 and 160, using the prime factorization method.
16. State whether  $\frac{6}{15}$  will have a terminating decimal expansion or a non-terminating repeating decimal.
17. State whether  $\frac{35}{50}$  will have a terminating decimal expansion or a non-terminating repeating decimal.
18. Find the LCM and HCF of 192 and 8 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ .

19. Use Euclid's algorithm to find the HCF of 4052 and 12576.
20. Show that any positive odd integer is of the form of  $4q + 1$  or  $4q + 3$ , where  $q$  is some integer.
21. 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  $m$ .
22. Prove that  $3\sqrt{2} + 5$  is irrational.
23. Prove that  $1/\sqrt{2}$  is irrational. (3 marks)
24. In a school there are two sections- section A and Section B of class X. There are 32 students in section A and 36 students in section B. Determine the minimum number of books required for their class library so that they can be distributed equally among students of section A or section B.
25. Express 3825 as a product of its prime factors.
26. Find the LCM and HCF of 8, 9 and 25 by the prime factorization method.
27. Find the HCF and LCM of 6, 72 and 120, using the prime factorization method.
28. State whether  $29/343$  will have a terminating decimal expansion or a non-terminating repeating decimal.
29. State whether  $23/2352$  will have a terminating decimal expansion or a non-terminating repeating decimal.
- 30.
31. 6. Find the LCM and HCF of 336 and 54 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$
32. Use Euclid's division algorithm to find the HCF of 867 and 255
33. Show that every positive even integer is of the form  $2q$ , and that every positive odd integer is of the form  $2q + 1$ , where  $q$  is some integer.
34. Use Euclid's division lemma to show that the cube of any positive integer is of the form  $9m$ ,  $9m + 1$  or  $9m + 8$ .
35. Prove that  $7\sqrt{5}$  is irrational.
36. Prove that  $\sqrt{5}$  is irrational.

37. 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?
38. Express 5005 as a product of its prime factors.
39. Find the LCM and HCF of 24, 36 and 72 by the prime factorization method.
40. Find the LCM and HCF of 96 and 404 by the prime factorization method
41. State whether  $64/455$  will have a terminating decimal expansion or a non-terminating repeating decimal
42. State whether  $15/1600$  will have a terminating decimal expansion or a non-terminating repeating decimal.
43. Find the LCM and HCF of 510 and 92 and verify that  $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ .
44. Use Euclid's division algorithm to find the HCF of 196 and 38220 (3 marks)
45. Use Euclid's division lemma to show that the cube of any positive integer is of the form  $9m, 9m + 1$  or  $9m + 8$
46. Show that every positive odd integer is of the form  $2q$ , and that every positive odd integer is of the form  $2q + 1$ , where  $q$  is some integer
47. Show that  $3\sqrt{2}$  is irrational.
48. Prove that  $3 + 2\sqrt{5}$  is irrational.
49. A sweet seller has 420 kaju barfis and 130 badam barfis. She 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. What is the maximum number of barfis that can be placed in each stack for this purpose?
50. Use Euclid's division algorithm to find the HCF of : (i) 135 and 225 (ii) 196 and 38220 (iii) 867 and 255