

1. Find the H.C.F. of 128, 240 using Euclid's Division Algorithm.
2. A number when divided by 61 gives 27 as quotient and 32 as remainder. Find the number.
3. Find the number by which 546 should be divided to get 7 as quotient and 7 as remainder.
4. Show that only one of the numbers  $(n + 2)$ ,  $n$  and  $(n + 4)$  is divisible by 3.
5. Show that  $n^2 - n$  is divisible by 2 for every +ve integer  $n$ .
6. A trader has 612 dettol soaps and 342 pears soaps. He packs them in boxes and each box contains exactly one type of soap. If every box contains the same number of soaps, the find the number of soaps in each box such that the number of boxes is the least.
7. Is  $7 \times 11 \times 13 + 11$  a composite number?
8. Find the missing numbers.
9. Find HCF and LCM of 45, 75 and 125.
10. Given that H.C.F (306, 657) = 9. Find the L.C.M. (306, 657).
11. Find the largest positive integer that will divide 398, 436 and 542 leaving remainder 7, 11 and 15 respectively.
12. Find the H.C.F. and L.C.M. of 26 and 91 and verify that  
 $L.C.M. \times H.C.F. = \text{product of two numbers}$ .
13. 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?
14. Find the greatest number of 6 digits exactly divisible by 24, 15 and 36.
15. Prove that  $\sqrt{2}$  is not a rational number.
16. Prove that  $\sqrt{3} + \sqrt{5}$  is an irrational number.
17. Without actually calculating, state whether the following rational numbers have a terminating or non-terminating repeating decimal expansion.
 

(i) $\frac{27}{343}$	(ii) $\frac{19}{1600}$	(iii) $\frac{129}{2^2 \times 5^5 \times 3^2}$
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18. What can you say about the prime factorization of the denominators of the following rationals:
 

(i) 36.12345	(ii) $36.\overline{5678}$
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