

- H.C.F. of two consecutive even numbers is:
a. 0 b. 1 c. 4 d. 2
- If the HCF of 85 and 153 is expressible in the form of $85n - 153$, then the value of n is:
a. 3 b. 2 c. 4 d. 1
- Rational number $\frac{p}{q}$, $q \neq 0$, will be terminating decimal if the prime factorization of q is of the form. (m and n are non-negative integers)
a. $2^m \times 3^n$ b. $2^m \times 5^n$ c. $3^m \times 5^n$ d. $3^m \times 7^n$
- $119^2 - 111^2$ is:
a. Prime number b. composite number
c. an odd prime number d. an odd composite number
- Prove that $\frac{2\sqrt{3}}{5}$ is irrational.
- Is $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ a composite number? Justify your number.
- Show that 4^n can never end with the digit zero for any natural number n .
- If d is the HCF of 45 and 27, find x, y satisfying $d = 27x + 45y$.
- Use Euclid's division lemma to show that cube of any positive integer is either of the form $9q, 9q + 1$, or $9q + 8$ for some integer q .
- Show that any positive odd integer is of the form $4q + 1$ or $4q + 3$ where q is a positive integer.
- 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?