

TEST - 2

CLASS B.A-3/B.SC-3

DIVISIBILITY

1. Prove that $(a,m)=(b,m)=1$ iff $(ab,m)=1$.
2. If a,b,c are positive integers s.t. $(a,b)=1$ and $ab=c^n$, then a and b themselves are exact n th power.
3. For all positive integers m and n , show that $(a^m-1, a^n-1) = a^{(m,n)}-1$ where $a>1$.
4. Find values of x and y to satisfy $71x-50y=1$
5. If $a>0, b>0$ are two integers, then $(a,b)[a,b]=ab$
6. State and prove fundamental thm of arithmetic.
7. Prove that there are infinite number of primes of the form $4n+3$.
8. Prove that Fermat numbers are mutually co-prime.