SRM Institute of Science and Technology
Department of Mathematics
18MAB302T-Discrete Mathematics
Unit – II: Combinatorics, Number Theory

Tutorial Sheet - 2

S.No.	Questions	Answers
	Part - A	
1	Which positive integers less than 30 are relatively prime to 30?	
2	Prove that d|n and d|m implies d|(an+bm)	
3	Prove that the square of an integer is of the form 4m or 4m+1	
4	Prove that the square of an odd integer is of the form 8m+1	
5	Show that $\sqrt{2}$ is an irrational number	
	Part - B	
6	Let a and b be integers. Prove that (i) $a\|b$ and $b \neq 0$ implies $\|a\| \leq \|b\|$ (ii) $a\|b$ and $b\|a$ implies $\|a\| = \|b\|$	
7	Prove that if $2^n + 1$is prime, then n is a power of 2	
8	Prove that $n^4 + 4$ is composite if $n > 1$	
9	Prove that the product of any three consecutive integers is divisible by 6	
10	Find the gcd of (6773760, 12902400)	322560