



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