NATIONAL UNIVERSITY OF SINGAPORE
DEPARTMENT OF MATHEMATICS
MA2214 COMBINATORIAL ANALYSIS

TUTORIAL 1: SUGGESTED SOLUTIONS **SEMESTER II, AY 2010/2011**

1. The prime factorization of 540 is $2^2 3^3 5^1$. Any divisor of 540 can only have 2, 3 and 5 as its prime factors, hence every divisor is of the form $2^m 3^n 5^k$, where $0 \leq m \leq 2$, $0 \leq n \leq 3$ and $0 \leq k \leq 2$. So we have 3 choices for m, 4 choices for n and 2 choices for k, by the product principle, the # of choices $= 3 \times 4 \times 2 = 24$.

2.

3.

4.

5.

6.