CSC 4-151 Discrete Mathematics for Computer Science

Quiz 6 December 17, 2014



5014

No calculators are allowed. You may leave your answer in power, factorial, or combinations format.

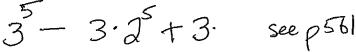
- 1. (4 pts.) Let  $A = \{1,2,3\}$  and  $B = \{a,b,c,d,e\}$ .
- How many functions are there from A to B?

How many 1-1 functions are there from A to B?

5.4.3 = P(5,3)

How many onto functions are there from A to B?

d. How many onto functions are there from B to A?



2. (2 pts.) a. How many strings of six English capital letters are there that start with T, if letters can be repeated?

265

b. How many strings of six English capital letters are there that start with SO, if letters cannot be repeated?

3. (2 pts.) What is the coefficient of  $a^9b^7$  in the expansion of  $(a + b)^{16}$ ?

C(16,7)

4. (2 pts) What is the smallest number of people that can be in a room so that you can guarantee at least 3 share birthday months?

25 since \[ \frac{25}{12} = 3