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CS 225

Quiz over weeks 7 and 8 material

1) a) 10 \* 9 \* 8 \* 7 \* 6 = 30,240 ways to form a line of 5 people.

b) C(m,n) = m! / n!(m-n)! = 10! / 5! (10-5)! = = =

30,240 / 120 = 252 ways

2) a) starting with a, ending with e, means only 3 letters remain in the middle(b,c,d)

3! = 3\*2\*1 = 6 strings possible.

b) group 'de' as one character, 4! = 4\*3\*2\*1 = 24 strings

3) a) (n+r - 1)! / r!(n-1)! = (3 + 10 -1)! / 10!(3-1)! = 12! / 10!2! = 12\*11 / 2 = 66 color combinations

b) 3 possibilties, draw 5. 35 = 243 color sequences

c) count combinations of 8. (n + r - 1 ) ! / r! (n -1 )! = (2+8-1)! / 8!(2-1)! = 9! / 8! = 9 possible combinations with exactly 2 yellow beans

d) count combinations of 8 red/green/yellow beans. (n+r-1)! / r!(n-1)! = (3+8-1)! / 8!(3-1) !

= 10! / 8!2! = 10\*9 / 2 = 45 possible combinations with at least 2 yellow beans