PASCAL'S TRIANGLE

Note Title 1/15/2013

$n = 0$ $\quad {}_0C_0 = 1$

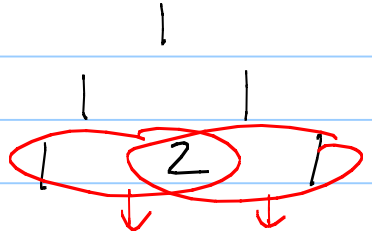
$n = 1$ $\quad {}_1C_0 = 1 \quad {}_1C_1 = 1$

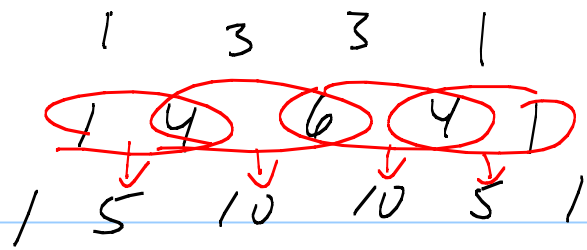
$n = 2$ $\quad {}_2C_0 = 1 \quad {}_2C_1 = 2 \quad {}_2C_2 = 1$

$n = 3$ $\quad {}_3C_0 = 1 \quad {}_3C_1 = 3 \quad {}_3C_2 = 3 \quad {}_3C_3 = 1$

AND SO ON

THIS PASCAL'S TRIANGLE TO THE 7^{TH} ROW





IE MR. MORGAN INVITES 6 FRIENDS TO A BAR-B-QUE.

I DON'T KNOW HOW MANY ARE COMING. HOW MANY

COMBINATIONS OF PEOPLE COULD OCCUR?

SOLN CASE 1 → NO FRIENDS $r = 0$ ${}_6C_0 = 1$

2 → 1 FRIEND $r = 1$ ${}_6C_1 = 6$

3 → 2 FRIENDS $r = 2$ ${}_6C_2 = 15$

4 → 3 FRIENDS $r = 3$ ${}_6C_3 = 20$

5	4	r = 4	${}_6C_4 = 15$
6	5	r = 5	${}_6C_5 = 6$
7	6	r = 6	${}_6C_6 = 1$

THIS IS 7TH ROW OF PASCALS TRIANGLE

$1 + 6 + 15 + 20 + 15 + 6 + 1 = 64$

PATHWAYS

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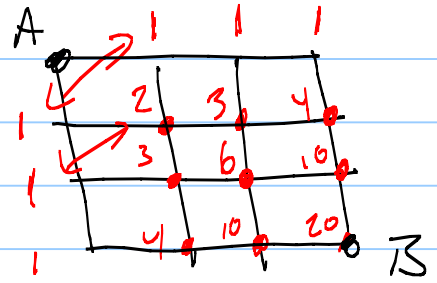
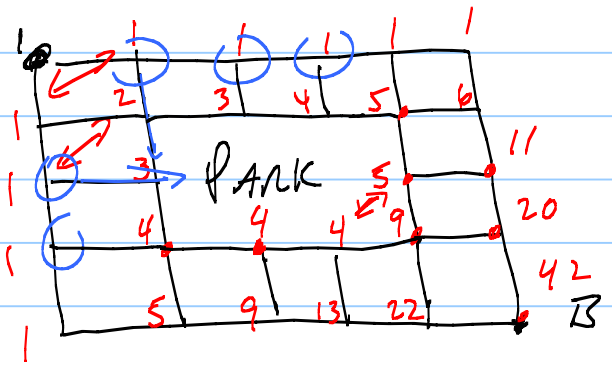


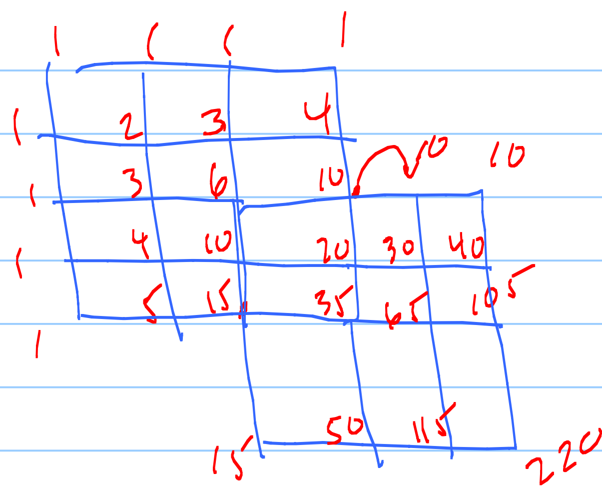
$$\frac{6!}{3!3!} = 20$$

IE



$$\frac{9!}{5!4!} \times \frac{5!}{3!2!}$$

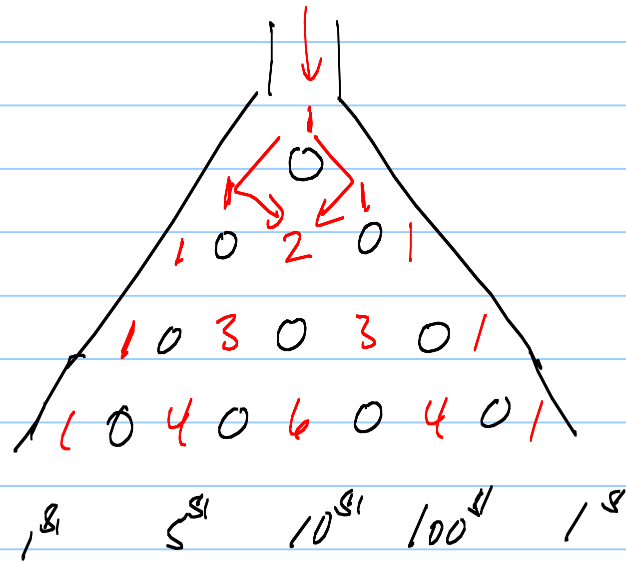
IX



H/W Pg. 51

SECT 7.5

1-8


1
1 0 2 0 1
1 0 3 0 3 0 1
1 0 4 0 6 0 4 0 1