

Universidad Mariano Gálvez de Guatemala
Boca del Monte

Ingeniería en Sistemas. Ciclo II, "c"
Jornada Sábado.

MATEMÁTICA DISCRETA

ALFREDO GIOVANNI FIGUEROA GABRIEL



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I ninos
 n_1, n_2, n_3, n_4, n_5

n_1	n_2	n_3	n_4	n_5
1	3	4	1	1
2	5	3	0	0
8	0	1	0	1

$$Pr_{14}^{4,10} = \frac{14!}{4! \cdot 10!} = 1001$$

$$Pr_{12}^{4,8} = \frac{12!}{4! \cdot 8!} = 495$$

$$Pr_9^{4,5} = \frac{9!}{4! \cdot 5!} = 126$$

III recipients
 $1, 2, 3, 4$

6 = recipient 1

5 = recipient 2

7 = recipient 3

2 = recipient 4

$$K_{4,20} = \left[\frac{23}{20} \right]$$

$$\text{III} \quad \left(\frac{31+12-1}{12} \right)$$

$$7 \text{ conos chocolate } \left(\frac{30+5-1}{5} \right)$$

$$8 \text{ conos chocolate } \left(\frac{30+4-1}{4} \right)$$

$$12 \text{ conos chocolate } \left(\frac{30+0-1}{0} \right)$$

$$\left(\frac{31+12-1}{12} \right) + \left(\frac{30+5-1}{5} \right) + \left(\frac{30+4-1}{4} \right) + \left(\frac{30+3-1}{3} \right) + \left(\frac{3+2-1}{2} \right) + \left(\frac{30+1}{1} \right)$$

IV

$$x_1 + x_2 + x_3 + x_4 = 32$$

$$a) x_i \geq 0, 1 \leq i \leq 4$$

$$\left(\frac{32+4-1}{32} \right) = 6,575$$

$$b) x_i > 0, 1 \leq i \leq 4$$

$$\left(\frac{28+4-1}{28} \right) = 1,405$$

$$c) x_1, x_2 \geq 5, x_3, x_4 \geq 7$$

$$\binom{8+4-1}{8} = 165$$

$$d) x \geq 0, 1 \leq i \leq 4$$

$$C(k, 0) = 1 \text{ para cualquier } k$$

$$e) x_i \geq -2, 1 \leq i \leq 4$$

$$C(40+4-1, 40) = 12341$$

$$f) x_1, x_2, x_3 > 0, 0 < x_4 \leq 25$$

$$C(28+4-1, 28) = C(31, 28) = 4495$$

$$C(4+3-1, 3) = C(6, 3) = 20$$

$$\approx 4,475$$