ALEJANDRO SANTORUM VARELA

EJERCICIOS COMBINATORIA

1. a) $\binom{40}{10} = C_{10}^{40}$

b) $\binom{40}{10} - \left(4.\binom{30}{10}\right)$

2. a) $\left.\begin{matrix}25 \\ 2\end{matrix}\right\}$ 27 símbolos $\Rightarrow \binom{27}{2}$

b)

3.

4. a) $\dfrac{11!}{2!\,2!\,2!}$

b) $3\left(\dfrac{5!}{2!\,2!} \cdot \dfrac{6!}{2!}\right)$

5. a) $\binom{8}{1}.\binom{8}{2}.\binom{8}{3}.\binom{8}{4}.\binom{8}{5}$

b) $\binom{8}{5}$

6.

7. a) $\binom{60}{12}$

b) $\binom{60}{12} - \binom{15}{12}$

c) $\binom{60}{12} - \left[\binom{15}{12} + \binom{15}{11} + \binom{15}{10} + \binom{15}{9} + \binom{15}{8} + \binom{15}{7} + \binom{15}{6} + \binom{15}{5} + \binom{15}{4}\right]$

8. a) $\binom{10}{6} \cdot \binom{9}{6}$

b) $V_6^{10} \cdot V_6^9$

9. a) $2 \cdot 4 \cdot 4 \cdot 4 \cdot 4$

b) $1 \times 2 \times 5 \times 7 \times 5 \times 1$

10. a) 10 asteriscos, 2 barras } 12 símbolos $\binom{12}{2}$

b)

c)

11. a) $\binom{88}{5}$

b) $83 - 60 = 23$
$\binom{28}{5}$

c) $\binom{28}{5} - \binom{28}{23} - \binom{23}{22} - \binom{23}{21} - \binom{23}{20}$

12. a) $\dfrac{15!}{2!\,3!\,2!\,2!\,2!\,2!}$

b) $\dfrac{7!}{3!\,2!\,2!} \cdot \dfrac{8!}{2!\,2!\,2!}$