Tarefa Básica

1- $\binom{8}{3} = \frac{8!}{3!(8-3)!} = \frac{8.7.6.5}{3.2.1.5} = 56$ // (B)

2- $\binom{200}{198} = \frac{200!}{198!(200-198)!} = \frac{200.199.198}{198.2.1} = 19900$ (A)

3- $\binom{n-1}{2} = \binom{n+1}{4}$ $\quad n-1 = n+1$ $\quad n-1+n+1 = 2+4$

2 $\quad 2n = 6$

$n = \{2, 3\}$ $\quad n = 3$

4- $\binom{20}{13} + \binom{20}{14} = \binom{21}{7}$ //

$14+13 = 20 \rightarrow 7$

5- $\binom{n}{0} + \binom{n}{1} + \binom{n}{2} + \ldots + \binom{n}{n} ? = 2^n$ linha n

6- a) $\sum_{p=0}^{10} \binom{10}{p} = \binom{10}{0} + \binom{10}{1} + \binom{10}{2} + \ldots + \binom{10}{10} = 2^{10} = 1024$

b) $\sum_{p=0}^{9} \binom{10}{p} = \binom{10}{0} + \binom{10}{1} + \binom{10}{2} + \binom{10}{3} + \ldots + \binom{10}{9} = 2^{10} - 1 = 1023$

c) $\sum_{p=2}^{9} \binom{9}{p} = \binom{9}{2} + \binom{9}{3} + \binom{9}{4} + \ldots + \binom{9}{9} = 2^9 - 10 = 502$

d) $\sum_{}^{10} \binom{4}{} + \binom{5}{} + \binom{6}{} + \ldots + \binom{10}{} = \binom{11}{}$

DOM SEG TER QUA QUI SEX SÁB

DOM LUN MAR MIÉ JUE VIE SÁB

$$\binom{11}{5} \to \frac{11}{5!(11-5)!} = \frac{11.10.9.8.7.6}{5.4.3.2.1.6} = \frac{55440}{120} = 462$$

e) $\sum_{P=5}^{10} \binom{P}{5} \to \binom{5}{5} + \binom{6}{5} + \binom{7}{5} + \ldots + \binom{10}{5} = \binom{11}{6}$

$$\binom{11}{6} \to \frac{11}{6!(11-6)!} = \frac{11.10.9.8.7.6.5}{6.5.4.3.2.1.5} = \frac{332640}{720} = 462$$

$$7 - \sum_{K=0}^{11} \binom{11}{K} = 512 \quad 2^9 = 512$$

(e)