DOM SEG TER QUA QUI SEX SÁB
DOM LUN MAR MIÉ JUE VIE SÁB

___/___/___

$K = \cancel{243x^{15}} + \cancel{810x^{10}} + \cancel{1080x^5} + 720 + \frac{\cancel{240}}{\cancel{x^5}} + \frac{\cancel{32}}{\cancel{x^{10}}} \cancel{- 243x^{15}} \cancel{- 810x^{10}} \cancel{- 1080x^5}$

$\frac{\cancel{240}}{\cancel{x^5}} \quad \frac{\cancel{-32}}{\cancel{x^{10}}} \quad K = 720$

Resposta: alternativa E

7. $(2x+y)^5 \quad (x=1, y=1): (2+1)^5 = 3^5 = 243$ Resposta: alternativa C

4. $\left(x+\frac{1}{x^2}\right)^9 \rightarrow \left(x+x^{-2}\right)^9$

$\binom{9}{k} x^{9-k} (x^{-2})^k = x^0$

$9-k+-2k=0$

$3k=9$

$k=3$ Resposta: alternativa D

$\binom{9}{3}$

5. $\left(x+\frac{1}{x^2}\right)^n \quad (x+x^{-2})^n \rightarrow$ linha n: $\binom{n}{k} \cdot x^{n-k} \cdot (x^{-2})^k$

$\binom{n}{k} x^{n-k} \cdot x^{-2k}$

$x^0 \rightarrow n-k-2k=0$

$n-3k=0$

$n=3k$

$\frac{n}{3}=k$ Resposta: alternativa C

6. $K=\left(3x^3+\frac{2}{x^2}\right)^5-\left(243x^{15}+810x^{10}+1080x^5+\frac{240}{x^5}+\frac{32}{x^{10}}\right)$

$(3x^3+2x^{-2})^5=\binom{5}{0}\cdot(3x^3)^5(2x^{-2})^0+\binom{5}{1}(3x^3)^4(2x^{-2})^1+\binom{5}{2}(2x^{-2})^2+\binom{5}{3}(3x^3)$

$(2x^{-2})^3+\binom{5}{4}(3x^3)^1(2x^{-2})^4+\binom{5}{5}=243x^{15}+810x^{10}+1080x^5+720+\frac{240}{x^5}+\frac{32}{x^{10}}$

$K=243x^{15}=818x^{10}+1080x^5+720+\frac{240}{x^5}+\frac{32}{x^{10}}-\left(243x^{15}+810x^{10}+1080x^5\right.$

$\left.\frac{240}{x^5}+\frac{32}{x^{10}}\right)$

DOM SEG TER QUA QUI SEX SÁB
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1. $\binom{6}{k} 1^{6-k} (2x^2)^k$

$\binom{6}{k} 2^k . x^{2k}$

$\binom{6}{4} 2^4 . x^8 = 6! . 16 . x^8$

$\frac{720}{24 . 2} . 16 . x^8 = 240x^8 \rightarrow x^8 = 240$

Resposta: alternativa C

2. $(14x - 13y)^{237}$

$(14.1 - 13.1)^{237}$

$(14 - 13)^{237} = 1^{237} = 1$

Resposta: alternativa B

3. $T_{k+1} = \binom{11}{k} x^{11-k} a^k = 1386x^5$

$11 - k = 5$

$k = 6$

$T_{6+1} = \binom{11}{6} x^5 a^6 = 1386x^5$

$T_1 = \frac{11 . 10 . 9 . 8 . 7 . 6!}{6! 5!} a^6 = 1386$

$T_1 = \frac{55440}{120} a^6 = 1386$

$462a^6 = 1386$

$a^6 = \frac{1386}{462}$

$a^6 = 3$

$a = \sqrt[6]{3}$ Resposta: alternativa A