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$$1- \binom{6}{k} \cdot 1^{6-k} \cdot (2x^2)^k = \binom{6}{k} \cdot 1^{6-k} \cdot 2^k \cdot x^{2k}$$

$$\binom{6}{4} 1^{6-4} \cdot 2^4 \cdot x^{2 \cdot 4}$$

$$2k=8$$

$$k=4$$

$$\frac{6!}{4!(6-4)!} \cdot 1^2 \cdot 16 \cdot x^8 = \frac{3 \cdot 5}{1} \cdot 16x^8 = 240x^8$$

Alternativa C

$$2- (14-13)^{237} = 1^{237} = 1 \rightarrow \text{Alternativa B.}$$

$$3- \binom{11}{k} \cdot x^{11-k} \cdot a^k$$

$$11-k=5$$

$$k=6$$

$$\binom{11}{6} \cdot x^{11-6} \cdot a^6 = 1386x^5$$

$$\frac{11 \cdot 7}{4} \cdot a^6 = 1386 = 462a^6 = 1386$$

$$a^6 = 3$$

$$a = \sqrt[6]{3} = \text{Alternativa A}$$

4. ...

$$\binom{9}{0}x^9 + \binom{9}{1}x^6 + \binom{9}{2}x^3 + \binom{9}{3}x^0 = \text{termo ind. } x^0$$

$$\binom{9}{3} \text{ Alternativa D.}$$

$$5- \binom{n}{k} \cdot x^{n-k} \cdot (x^2)^k = \binom{n}{k} x^{n-k} \cdot x^{-2k}$$

$$n - k - 2k = 0$$

$$n - 3k = 0$$

$$n = 3k$$

$$n = k$$

3

→ Alternativa C

$$6- K = 243x^{15} + 810x^{10} + 1080x^5 + \boxed{720} + \frac{240}{x^5} + \frac{32}{x^{10}} - (243x^{15} + 810x^{10} + 1080x^5 + \frac{240}{x^5} + \frac{32}{x^{10}})$$

$$K = 720 - \text{Alternativa E}$$

$$7- (2x+y)^5 \rightarrow \text{soma coeficientes} = ?$$

$$(x=1, y=1) = (2+1)^5 = 3^5 = 243 \rightarrow \text{Alternativa C}$$