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Tarefa Básica.

$$① (1 + 2x^2)^6$$

$$\binom{6}{k} \cdot 1^{6-k} \cdot (2x^2)^k \rightarrow \text{coef de } x^8$$

$$2k = 8$$

$$k = 4$$

$$\binom{6}{4} \cdot 1^2 \cdot (2x^2)^4 =$$

$$15 \cdot 1 \cdot 16x^8 = 240x^8$$

(C)

②

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

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

(B)

③

$$(x + A)^{11} = 1386x^5$$

$$\binom{11}{k} \cdot x^{11-k} \cdot A^k = 1386x^5$$

$$11 - k = 5$$

$$6 = k$$

(A)

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

$$462 \cdot A^6 = 1386$$

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

$$A = \sqrt[6]{3}$$

④

$$\left(x + \frac{1}{x^2}\right)^9$$

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

(D)

$$\left(x + (-x^2)^{-1}\right)^9$$

$$9 - k - 2k = 0$$

$$9 = 3k$$

$$3 = k$$

$$\binom{9}{3}$$

$$\left(x + (-x^2)^{-1}\right)^9$$

⑤

$$\left(x + \frac{1}{x^2}\right)^N$$

$$\binom{N}{k} \cdot x^{N-k} \cdot (-x^2)^k$$

$$\left(x + (-x^2)^{-1}\right)^N$$

$$N - k - 2k = 0$$

$$N = 3k$$

(C)

$$\left(x + (-x^2)^{-1}\right)^N$$

⑥

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

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

$$\binom{5}{0} \cdot 3x^3^5 + \binom{5}{1} \cdot (3x^3)^4 \cdot \left(\frac{2}{x^2}\right)^1 + \binom{5}{2} \cdot (3x^3)^3 \cdot \left(\frac{2}{x^2}\right)^2$$

$$+ \binom{5}{3} \cdot (3x^3)^2 \cdot \left(\frac{2}{x^2}\right)^3 + \binom{5}{4} \cdot (3x^3)^1 \cdot \left(\frac{2}{x^2}\right)^4 + \binom{5}{5} \cdot \left(\frac{2}{x^2}\right)^5 =$$

$$\left(243x^{15} + 810x^{10} + 1080x^5 + 720 + \frac{240}{x^5} + \frac{32}{x^{10}}\right)$$

S T Q Q S S D

$$\left(\cancel{243x^{15}} + \cancel{810x^{10}} + \cancel{1080x^5} + 720 + \frac{\cancel{240}}{\cancel{x^5}} + \frac{\cancel{32}}{\cancel{x^{10}}} \right) -$$

$$\left(\cancel{243x^{15}} + \cancel{810x^{10}} + \cancel{1080x^5} + \frac{\cancel{240}}{\cancel{x^5}} + \frac{\cancel{32}}{\cancel{x^{10}}} \right) = \underline{720}$$

(E)

(7)

$$(2x + y)^5$$

$$(2+1)^5 = 3^5 = 243$$

(C)