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1.

(1+2x2)6 k = 0,1,2,3,4,5,6

Tk = . 16-k . (2x2)k Tk = . 1(2 . x2)k Tk = . (2k . x2k)

2k = 8 k = = 4

T4+1 = . (24. x2 . 4)

T5 = . 16. x8

T5 = = = = = 15

T5 = 15 . 16 . x8 T5 = **240** . x8 **(C)**

2.

(14x-13y)237

Soma dos coeficientes de x e y→ (14 - 13)237 → **1**237 **(B)**

3.

(x + a)11 = 1386 x5

Tk+1 = . x11-k. ak =1386 x5

11 - k = 5 → k = 6

T6+1 = . x11-6. a6 =1386 x5

T7 = . x5. a6 =1386 x5

= = = = = = 462

T7 = 462. x5. a6 =1386 x5

T7 = 462. a6 =1386

a6 = → a6 = 3 → a = **(A)**

4.

(x + )9 →(x - (x2)-1)9

Tk+1 = . x9-k. (-x-2)k

9-k-2k=0 → 9 - 3k = 0 → 9 = 3k → k = = 3

Termo independente = **(D)**

5.

(x + )n

Tk+1 = . xn-k . ()k

Tk+1 = . xn-k. (-x-2)k

n - k - 2k = 0 → n - 3k = 0 → n = 3k →  **= k**

**Só teremos um termo independente de x caso n seja divisível por 3 (C)**

6.

k = (3x³ + )5 - (243x15 + 810x10 + 1080x5 + + )

1 . (3x³)5 . ()0 + 5 (3x³)4 . ()¹ + 10.(3x³)³ . ()² . 10.(3x³)² . ()³ + 5 . (3x³) . ()4 + 1 . (3x³)0 . ()5

243x15 +(5 . 81x12 . ) +(10 . 27x9 . ) +(10 . 9x6 ) +(5 . 3x² . ) +

243x15 + + + **720** + + Termo independente de x

(243x15 + + + + + 720) + (-243x15 - 810x10 - 1080x5 - - )

+ + + **720** - 810x10 - 1080x5 -

**Único termo independente (E)**

7.

(2x + y)5

1 . (2x)5 . (y)0 + 5 . (2x)4 . (y)¹ + 10 . (2x)3 . (y)2 + 10 . (2x)2 . (y)3 + 5 . (2x)1 . (y)4 + 1 . (2x)0 . (y)5

32x5 + 80x4y + 80x3y2 + 40x2y3 + 10xy4 + 1y5

32 + 80 + 80 + 40 + 10 + 1 → 32 + 200 + 11 = **243 (C)**