

3.5  $a_n = (0, 0, 1 \cdot 2^1, 0, 0, 2 \cdot 2^2, 0, 0, 3 \cdot 2^3, \dots)$

$$a_n = \sum_{i=2}^{\infty} (i-2) 2^{i-2} x^{i-2}$$

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~~$a_n = \sum_{i=0}^{\infty} (i+1) 2^{i+1} x^{i+1}$~~

$a_n = (0, 0, 2, 0, 0, 4, 0, 0, 8, \dots)$

$a_n = \sum_{i=0}^{\infty} 2 \cdot 2^{2i} x^{3i} = \frac{2x^2}{1-2x^3}$

~~$a_n = 2x \sum_{i=0}^{\infty} 2^i x^{3i}$~~

$c_n = (0, 1, 2, 3, \dots) = \sum_{n=0}^{\infty} n x^n = \frac{1}{(1-x)^2}$

$c_n = (0, 1 \cdot 2, 2 \cdot 2^2, 3 \cdot 2^3, \dots) = \sum_{n=0}^{\infty} n \cdot 2^n x^n = \frac{1}{(1-2x)^2}$

~~$c_n = (0, 1 \cdot 2, 2 \cdot 2^2, 3 \cdot 2^3, \dots)$~~

~~$c_n = \sum_{n=0}^{\infty} n 2^n x^n$~~

$c_n = (0, 0, 0, 1 \cdot 2, 0, 0, 2 \cdot 2^2, \dots) = \sum_{n=0}^{\infty} n 2^n x^{3n}$

$c_n = \frac{1}{(1-2x^3)^2}$

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$a_n = (0, 0, 1 \cdot 2, 0, 0, 2 \cdot 2^2, 0, \dots) = \frac{1}{(1-2x^3)^2} \cdot \frac{1}{x}$