$$2x^2 \sum_{k=0} (k+1) \cdot 2^k \cdot x^{3k} = 2x^2 \left(\sum_{k=0} k \cdot 2^k (x^3)^k + \sum_{k=0} 2^k (x^3)^k \right)$$

$$= 2x^2 \left(\sum_{k=0} k \cdot 2^k \cdot x^{3k} + \frac{1}{1-2x^3} \right)$$

$$= 2x^2 \left(\frac{1}{3}x \cdot \left(\sum_{k=0} 2^k x^{3k} \right)' + \frac{1}{1-2x^3} \right) = \frac{1}{3} \cdot \frac{2x^3}{(1-2x^3)^2} + \frac{2x^2}{1-2x^3}$$

$$(2^k \cdot x^{3k})' = 3k \cdot 2^k \cdot x^{3k-1}$$

Skromny kącik osób analitycznie opóźnionych w rozwoju

$$(50+3)^{33} = 50 \sum_{k=1}^{n} \binom{n}{k} 50^{k-1} \cdot 3^{n-k} + 50^0 \cdot 3^n$$

$$(30+3)^{33} = 30 \sum_{k=1}^{n} \binom{n}{k} 30^{k-1} \cdot 3^{n-k} + 30^0 \cdot 3^n$$

$$53^{33} - 33^{33} = 50 \sum_{k=1}^{n} \binom{n}{k} 50^{k-1} \cdot 3^{n-k} - 30 \sum_{k=1}^{n} \binom{n}{k} 30^{k-1} \cdot 3^{n-k}$$

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