1. Calculate the limit:
\[ \lim_{n \to \infty} 2^{-n} \cdot \text{Vol}_n \{ (x_1, \ldots, x_n) \in [-1,1]^n : x_1^{-1/3} + \cdots + x_n^{-1/3} > \sqrt{n} \} . \]

2. The characteristic function
\[ \cos \left( 2\pi \cdot 2^n x \right), \quad n = 1, 2, \ldots \]
where \( x \in (0,1) \) is the compact set \([-1,1] \). This is followed by...

3. Given the relation
\[ a_1 + \cdots + a_n - 1, \quad k \text{ shown} \in \{ 3, 6 \} \text{ with } a_k \in \{ 3 \text{ or } 6 \} \text{ and } \tau = \min \{ n : |S_n| = 3 \} - 1. \]
\( S_n = X_1 + \cdots + X_n \) is the series of the random variables. The function
\[ \lim_{n \to \infty} 2^{-n} A_n = \frac{1}{10} . \]

4. The probability
\[ \mathbb{P} (X_1 = +1) = 2/3 , \quad \mathbb{P} (X_1 = -1) = 1/3, \quad \mathbb{P} (S_\tau = +3) = \frac{1}{4} \text{ and } \mathbb{P} (S_\tau = -3) = \frac{3}{4} \text{ or } M_n = a^{S_n} \text{ where } a \text{ is a constant}. \]

Remark: Complete 36 kudos...