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2. For $k = 1, \dots, N$ choose a new sample according to

$$X_k = \begin{cases} Y_1, & \text{w.p. } \hat{w}_1 \\ \vdots & \\ Y_N, & \text{w.p. } \hat{w}_N \end{cases}$$

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Resampling

Transitional Markov Chain Monte Carlo (TMCMC)

- The goal is to sample the distribution:

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- At the last step, we obtain samples from the target distribution.

$$p_k(\vartheta | d) \propto p(d | \vartheta)^{\gamma_k} \pi(\vartheta)$$

Sampling Importance Resampling

Annealing

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Sampling Importance Resampling

1. If I have samples for $\gamma_1 = 0$ then using **SIR**
I have samples approximately for γ_2

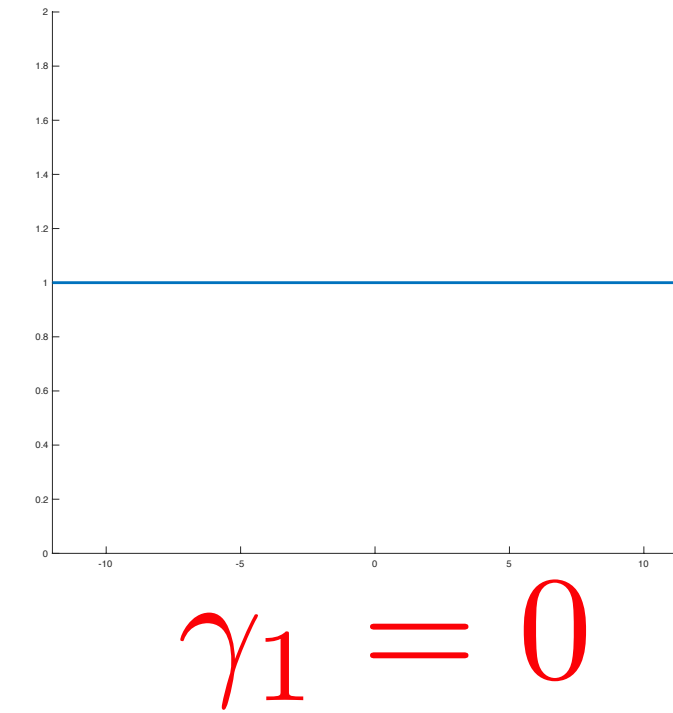
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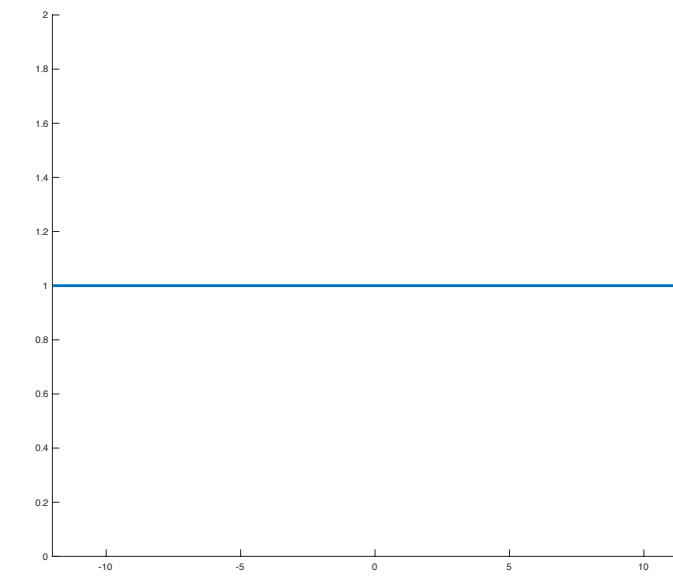


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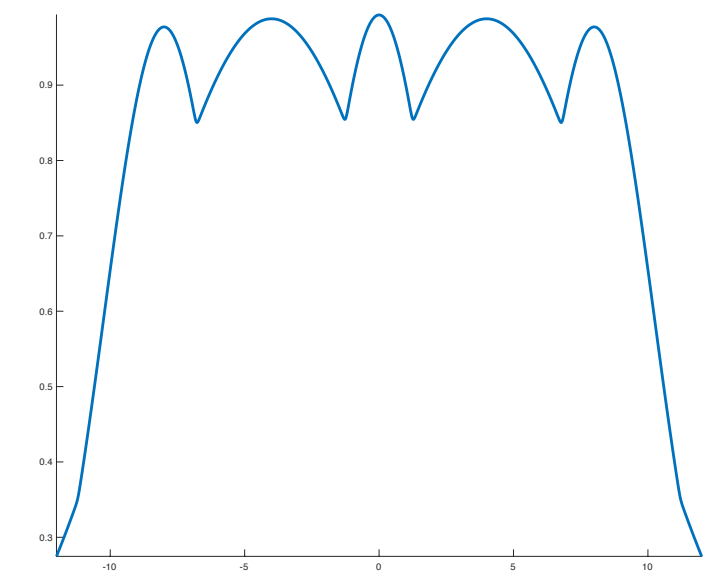
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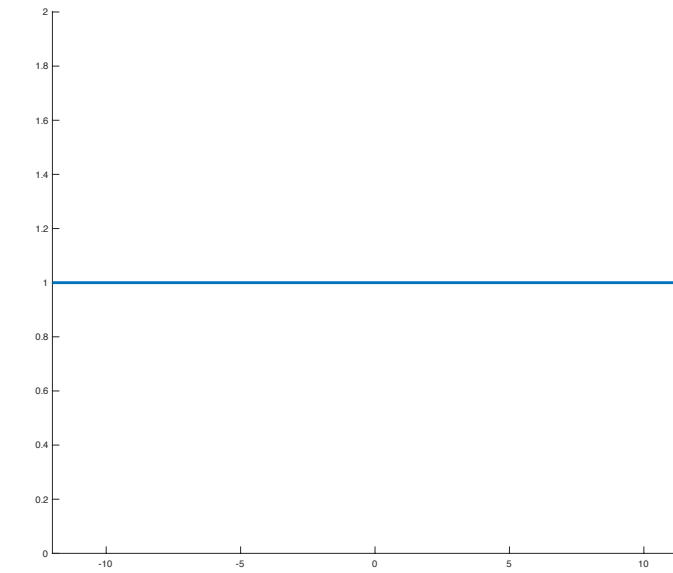
$$\gamma_2 = 0.01$$

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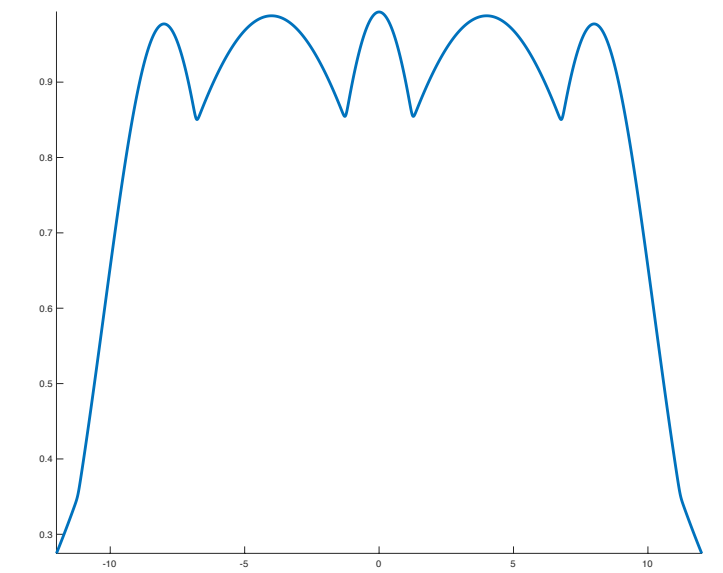
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Annealing



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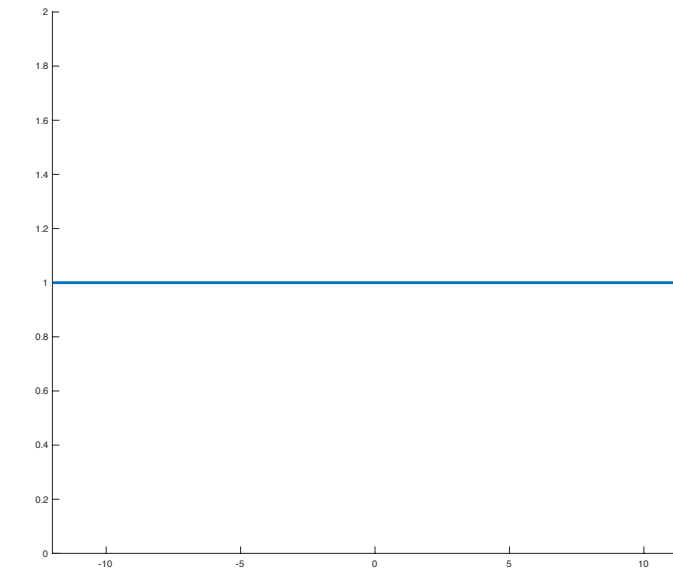
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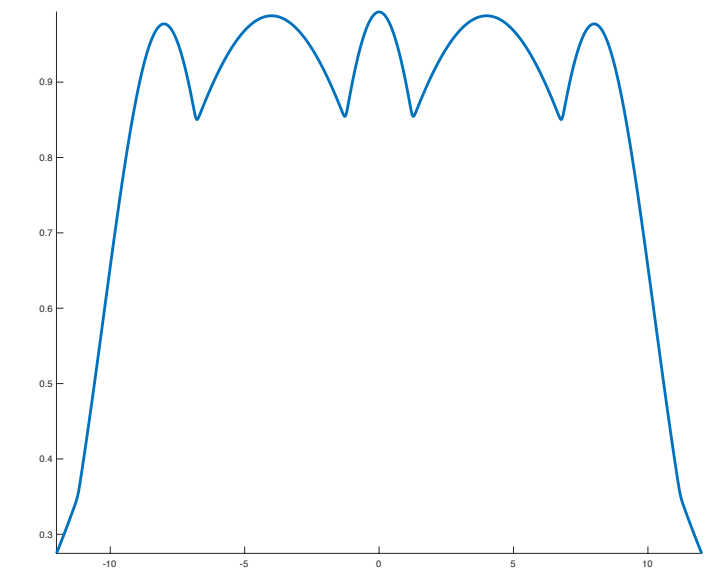
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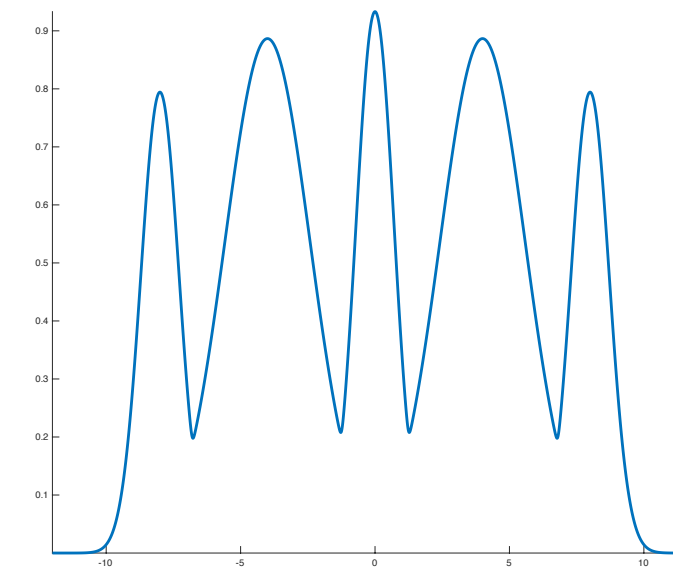
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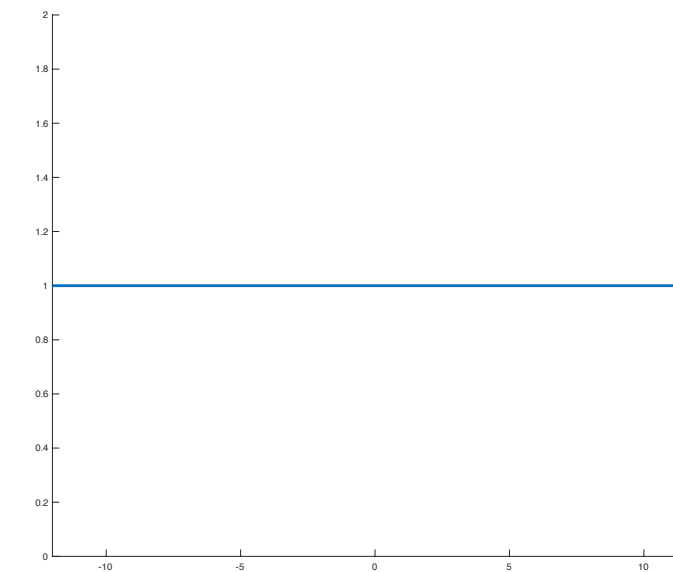
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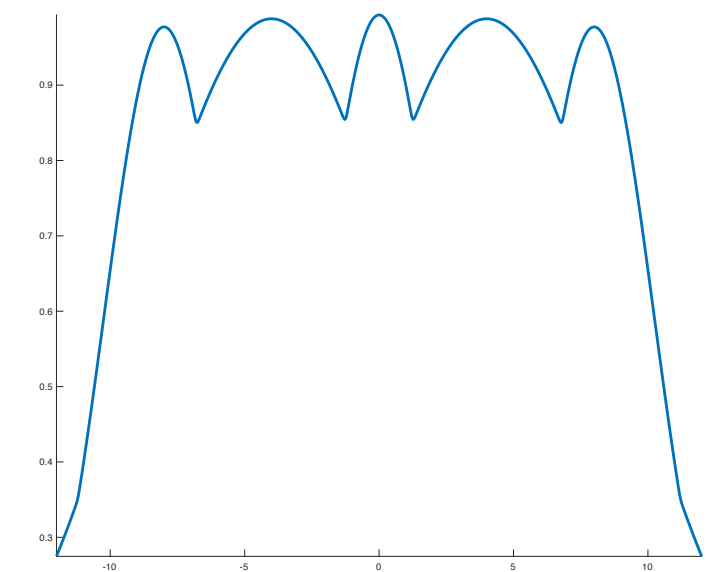
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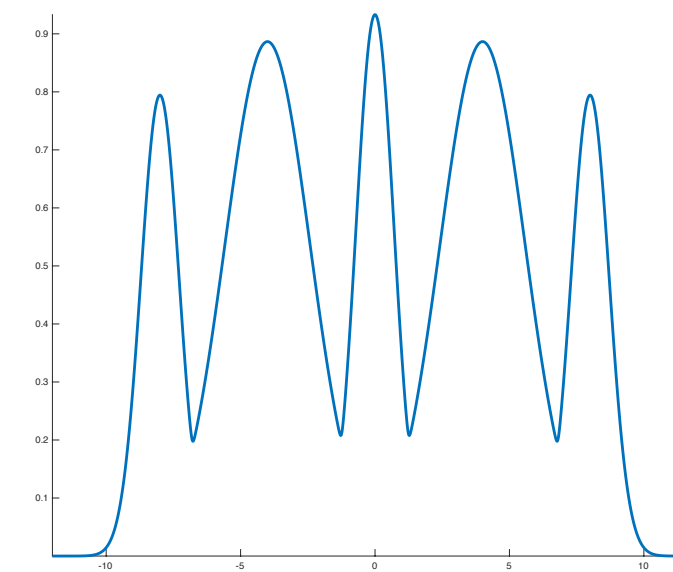
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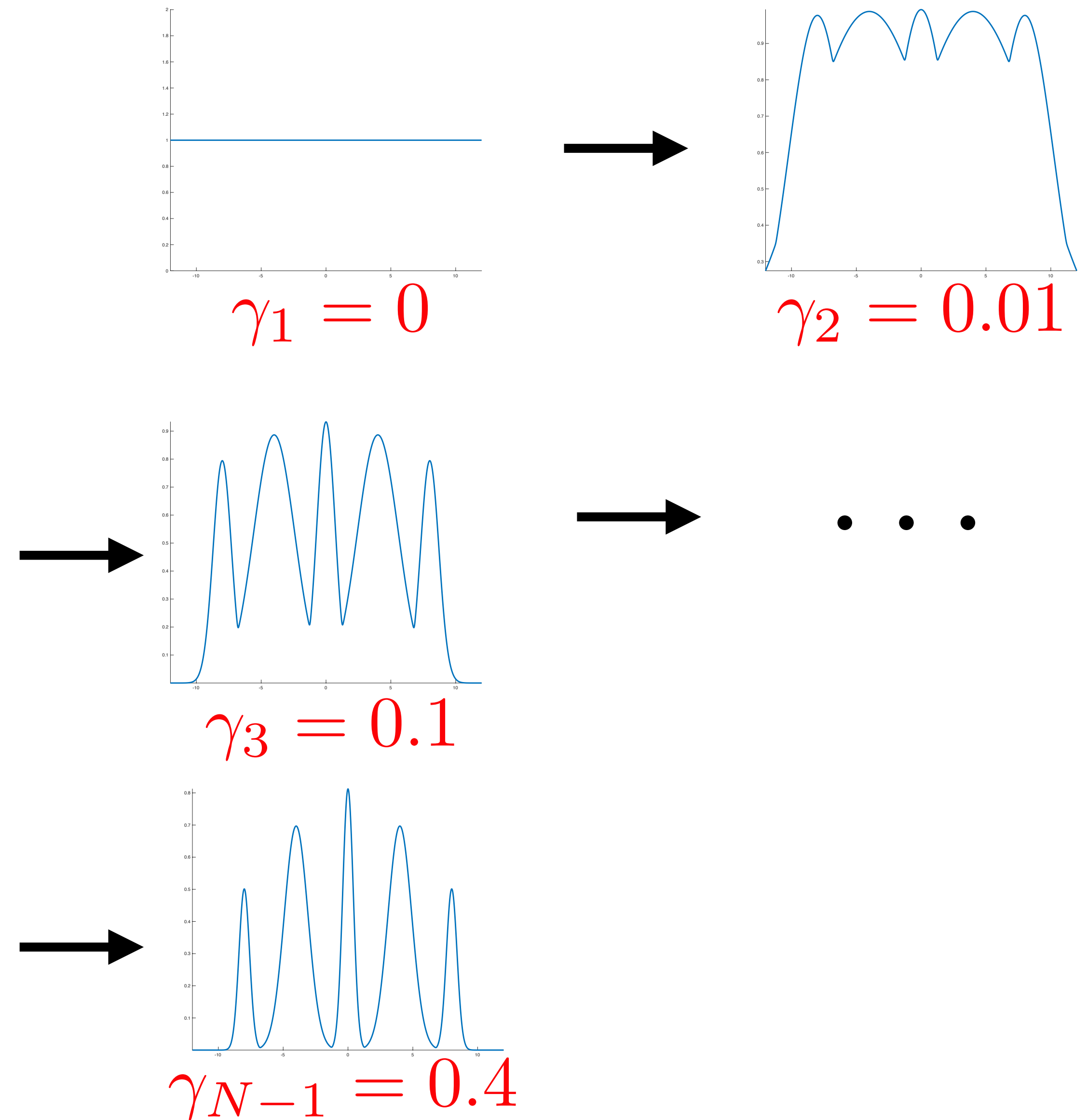
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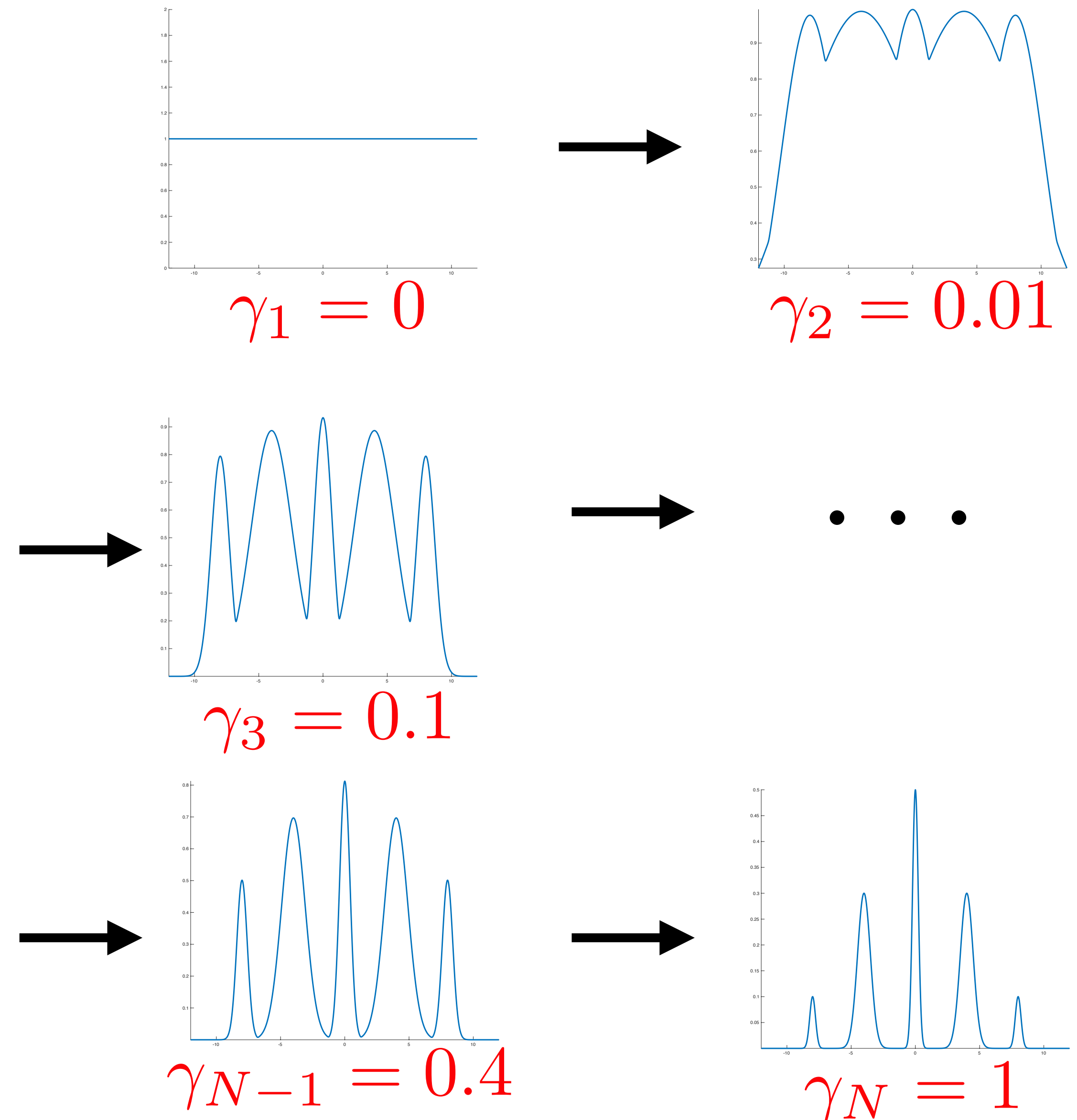


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$$p(d) \approx \prod_{k=1}^N S_k$$

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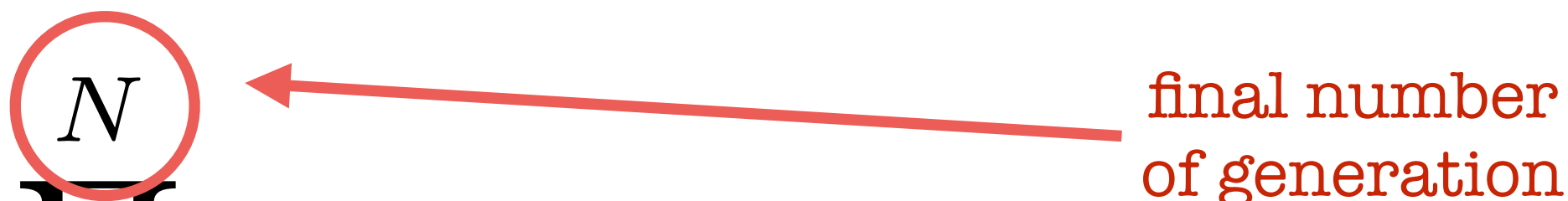
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weights at k-th generation

