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In [2]: import numpy as np

def ncr(n):
    return (np.math.factorial(100) / (np.math.factorial(n) * np.math.factorial(100 - n)))

#We have defined the probability function here as nCr*(p^r)*(q^(n-r)). We
def probability(n):
    return (ncr(n) * ((2 / 3) ** n) * ((1 / 3) ** (100 - n)))

#Function to find the final probability
def probless(n):
    if n >= 0:
        return (probability(n) + probability(n - 1))
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In [3]: probless(50)
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Out[3]: 0.0003284517931420376
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In [ ]:
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