Deutsch Algorithm  \[ f(0) = f(1) = 1 \]

Compare Paths of Quantum vs. Probabilistic

Quantum

(Classical) Treat \( H \) as coin flip
Deutsch Algorithm

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Compare Paths of Quantum vs. Probabilistic

Quantum

Classical

(Treat H as coin flip)

Both computations contain exactly the same sequence of paths. But positive + negative paths interfere to cancel out in quantum computation.