Tiebreaker Round

DMM 2021

1 Tiebreaker

1. You are standing on one of the faces of a cube. Each turn, you randomly choose another face that shares an edge with the face you are standing on with equal probability, and move to that face. Let $F(n)$ the probability that you land on the starting face after $n$ turns. Supposed that $F(8) = \frac{43}{256}$, and $F(10)$ can be expressed as a simplified fraction $\frac{a}{b}$. Find $a + b$. 