



$$\begin{aligned}
 \triangle AGD &\sim \triangle BGE \\
 \implies \frac{BE}{AD} &= \frac{1}{n} = \frac{1}{n} \\
 \implies \frac{HG}{GI} &= \frac{1}{n} \\
 \therefore \frac{BF}{BA} &= \frac{\frac{1}{n}}{(1 + \frac{1}{n})} = \boxed{\frac{1}{n+1}}
 \end{aligned}$$

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