









$\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$       $\frac{1}{4} \cdot \frac{1}{4} = \frac{1}{16}$       $\frac{1}{16} \cdot \frac{1}{16} = \frac{1}{256}$

All other probabilities are zero.  $\sum_{i=1}^{\infty} \frac{1}{2^i} = 1$