

Problem 1 (10 points)

Suppose the following sequence of events occurs:

$$1. \quad \frac{1}{2} \rightarrow \frac{1}{4} \rightarrow \frac{1}{8}$$

$$2. \quad \frac{1}{4} \rightarrow \frac{1}{8} \rightarrow \frac{1}{16}$$

$$3. \quad \frac{1}{8} \rightarrow \frac{1}{16} \rightarrow \frac{1}{32}$$

$$4. \quad \frac{1}{16} \rightarrow \frac{1}{32} \rightarrow \frac{1}{64}$$