Two raindrops randomly fall on a triangular region. The region is divided into 3 congruent subtriangles as shown.

1. What is the probability that the first raindrop lands in the shaded region?

*Hint:* View a raindrop as a single point in the triangle. What is the sample space? What is the event? How are events to be measured?

2. What is the probability that both raindrops land in the shaded region?

3. What is the probability that no raindrops land in the shaded region?

4. What is the probability that at least one raindrop lands in the shaded region?

5. What is the probability that exactly one raindrop lands in the shaded region?