

**Introduction to Probability**  
**Quiz 5**

A factory produces lightbulbs. There is a 1% probability that each lightbulb shipped from the factory is defective.

1. Find the probability that a shipment of 144 lightbulbs has at most 4 defective lightbulbs.

2. Use a Poisson random variable to approximate this probability.

3. Use a normal random variable to approximate this probability.