

3. Neutral particles released into an evacuated duct collide with the inner duct wall and are either scattered (reflected) with probability 0.16 or absorbed with probability 0.84.
 - (a) If four particles are released into the duct, what is the probability that all four will be absorbed by the inner duct wall?
 - (b) Exactly three of four?
 - (c) If 50 particles are released into the duct, what is the probability that exactly 10 will be reflected by the inner duct wall?

4. An experiment is conducted to select a suitable catalyst for the commercial production of ethylenediamine (EDA), a product used in soaps. Suppose a chemical engineer randomly selects three catalysts for testing from among a group of ten catalysts, six of which have low acidity and four of which have high acidity.
 - (a) Find the probability that no highly acidic catalyst is selected.
 - (b) Find the probability that exactly one highly acidic catalyst is selected.

5. A telephone operator handles, on average, five calls every 3 minutes. What is the probability that there will be no calls in the next minute? At least two calls?