4.

1. Assume that out of every 50 people in a city, one is a business owner. So, if one one citizen is selected randomly, what is the distribution of business owners?

A. $p = \dfrac{1}{50}$ $q = 1 - p = 1 - \dfrac{1}{50} = \dfrac{49}{50}$

$P(x = 1) = \dfrac{1}{50} = 0.02$

$P(x = 0) = \dfrac{49}{50} = 0.98$

2. If one out of 15 stocks perform extraordinarily, then what is the performance of a stock randomly selected from the portfolio?

$p = \dfrac{1}{15}$

$P(x = 1) = p = \dfrac{1}{15}$

3. In a medical examination the chances of error are 15%. Find the Bernoulli distribution if one patient is randomly selected out of 60 patients.

A. $15\% \text{ of } 60 = 9$

$P(x = 1) = \dfrac{51}{60} = 0.85$

$P(x = 0) = \dfrac{9}{60} = 0.15$