

Quiz 11 April 11, 2001, *Statistics for Business*

1. Consider 10 Bernoulli trials with success probability $\pi = 0.3$. Which of the following gives the chance of observing **at most one** success?
 - A) $10(0.3)^1(0.7)^9$
 - B) $(0.7)^{10}$
 - C) $1 - (0.7)^{10}$
 - D) $1 - 10(0.3)^1(0.7)^9$
 - E) $(0.7)^{10} + 10(0.3)^1(0.7)^9$
2. The standard deviation of the distribution of the sample proportion p based on n trials from a Bernoulli process is **largest** when $\pi = 0.5$.
 - A) True
 - B) False
3. Consider 10 Bernoulli trials. If $\pi = 0.45$, what is the chance that the sample proportion, p , is 0.33? Explain your answer.
4. Suppose that 20 samples (subgroups) each of size 50 are selected from a Bernoulli process. If there are 46 defectives overall, what is the value of \bar{p} ? Show your work.

Answers: 1. E, 2. A,

3. Zero since you can't get $p = 0.33$ with $n = 10$.

4. $\bar{p} = 46/(20 \times 50) = 0.046$