

**SOLUTIONS TO
TEST YOUR KNOWLEDGE: Binomial Distribution**

1. You have a circular table that seats 15 people and you have 15 guests coming for dinner. How many different seating arrangements can you make for your 15 guests around the table?

ANS.: 15!

2. How many ways can a class consisting of 30 students select 2 people – one will be class president and the other will be class vice president.

ANS.: ${}_{30}P_2 = 870$

3. We know that 8% of students major in accounting. What is the likelihood that in a random sample of 40 students, you will have 7 accounting majors?

ANS.: ${}_{40}C_7 (.08)^7 (.92)^{33} = .025$

4. A smart phone consists of 22 distinct parts. Each part is made in a plant that has average quality control so that only 1 out of 500 (.002) is defective. The smart phones are assembled in a plant in NYC. What is the likelihood that it will not work properly?

ANS.: $P(\text{work perfectly}) = {}_{22}C_0 (.002)^0 (.998)^{22} = .957$

Therefore, $P(\text{not work perfectly}) = 1 - .957 = .043$