



Supplemental Instruction Handouts

# Statistics

## Chapter 9

### Sampling Distributions

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1. The weekly exercise habits of middle managers follows a normal distribution with a mean of 4.2 hours and a standard deviation of 0.8 hours. You are to select 40 middle managers and record how long they do in fact exercise in a week.
  - A. What is the standard error of the sampling distribution?
  - B. What is the probability the middle managers workout between 4.2 and 4.5 hours a week?
  - C. What is the probability the middle managers workout more than 4.5 hours?
  - D. What is the probability the middle managers workout less than 4.0 hour?
  - E. Suppose there are a total of 400 middle managers in the company. What is the standard error?
2. It has been estimated that 20% of all university students switch majors within their first two years at university. If a random sample of 400 third – year university students is taken, what is the probability that 25% or less had switched majors?
3. You have been asked to study the distance employees must travel to get to work at your two company locations. The employees of the Toronto branch travel a mean of 280 kilometers per worker with a standard deviation of 30 kilometers a month. The employees of the Hamilton branch travel a mean of 290 kilometers per worker with a standard deviation of 26 kilometers a month. If we were to select a sample of 52 employees from the Toronto branch and 63 employees from the Hamilton branch, what is the likelihood that the mean kilometers travelled in Toronto is greater than the mean kilometers travelled in Hamilton?