

Name: \_\_\_\_\_

### Sample Examination #2, Stat 1001, S. Weisberg

1. Suppose that in a population of chickens, weight gain over the second and third week of life is normally distributed with mean 400 g and standard deviation 40 g. Find a value  $W$  so that 90% of all chickens in the population will have a weight gain that exceeds  $W$ . Note: The table on p. 137 will be provided on the exam.
2. You plan to buy two batteries, one of type A and one of type B. Type A batteries have lifetimes that are normally distributed with mean 100 hours and standard deviation 10 hours, while type B is normally distributed with mean 90 hours and standard deviation 20 hours. Which battery is more likely to last more than 120 hours? Show your work.
3. The weight of a box of bananas marked "Net weight 50 kg" is normally distributed with mean 52 kg and standard deviation 1 kg.
  - (a) Find the fraction of boxes that weigh at least 50kg.
  - (b) Find the fraction of boxes that weight between 50kg and 52kg.
4. Chapter 9, problem 7, page 154.
5. Chapter 10, problem 10, page 173.
6. True or false (and explain): Two variables will have large positive correlation if large values of one variable are associated with large values of the other. They will have a negative correlation is small values of one variable are associated with small values of the other variable.
7. Chapter 11, page 193, problem 14.
8. Chapter 11, page 192, problem 7.
9. Problem 5, page 218.