

## Chapter 6

### Self-test

1. A professor at a local university noted that the grades of her students were normally distributed with a mean of 73 and a standard deviation of 11. **DO NOT ROUND YOUR NUMBERS.**
  - a. The professor has informed us that 7.93 percent of her students received grades of A. What is the minimum score needed to receive a grade of A?
  - b. Students who made 57.93 or lower on the exam failed the course. What percent of students failed the course?
  - c. If 69.5 percent of the students received grades of C or better, what is the minimum score of those who received C's?

Answers:

- a. 88.51
  - b. 8.53%
  - c. 67.39
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2. The average life expectancy of dishwashers produced by a company is 6 years with a standard deviation of 8 months. Assume that the lives of dishwashers are normally distributed.
    - a. What is the probability that a randomly selected dishwasher will have a life expectancy of at least 7 years?
    - b. Dishwashers that fail operating in less than 4 ½ years will be replaced free of charge. What percent of dishwashers are expected to be replaced free of charge?
    - c. What are the minimum and the maximum life expectancy of the middle 95% of the dishwashers' lives? Give your answer in months.
    - d. If 155 of this year's dishwasher production fail operating in less than 4 years and 4 months, how many dishwashers were produced this year?

Answers:

- a. 0.0668
- b. 1.22%
- c. 56.32 and 87.68 (Months)
- d. 25,000