Math-71 Sections 02, 03, 60

Homework #7

Due: 10/21/2019 1:15pm

Reading

Read section 10.3

Problem

You are working quality control for a manufacturer of screws. You are sampling a particular screw as it comes off of the line. You expect the length of the screw to follow a normal distribution as follows, where the mean and standard deviation are expressed in centimeters (cm):

$$p(x) = \frac{1}{0.1\sqrt{2\pi}} e^{-50(x-2)^2}$$

1. What is the mean of the screw length?
2. What is the standard deviation of the screw length?
3. At what x value does the corresponding bell curve have its absolute maximum?
4. At what x values does the corresponding bell curve have its points of inflection?
5. What is the probability that a screw length will be between 1.8 and 2.2 cm?