Math 153 - Quiz 9

April 13, 2017

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary. YOU MUST WORK INDIVIDUALLY.

1. (4 points) In a recent year, SAT scores were normally distributed with mean 1498 and standard deviation 316. What is the probability that a randomly selected test has a score less than 1350 or greater than 1600?

$$P(x < 1350) + P(x > 1600) = 1 - P(1350 \le x \le 1600)$$

$$= 1 - \text{normalcdf}(1350, 1600, 1498, 316)$$

$$\approx 0.6932 = 69.32\%$$

2. (2 points) Heights of U.S. women aged 20–29 are normally distributed with mean 64.2 in and standard deviation 2.9 in. In a group of 750 women, about how many are exactly 66 in tall?

↳ Prob is zero $\Rightarrow$ None

3. (2 points) The lengths of time employees have worked at a certain company are normally distributed with mean 11.2 years and standard deviation 2.1 years. In a company cutback, the lowest 12% in seniority are laid off. What is the maximum length of time an employee could have worked and still be laid off?

$$\text{invNorm}(0.12, 11.2, 2.1) \approx 8.73 \text{ years}$$

4. (2 points) Refer to the problem above. What length of employment is at the 95th percentile?

$$\text{invNorm}(0.95, 11.2, 2.1) \approx 14.65 \text{ years}$$