ECO239 Statistics I Quiz 4 Jan. 3, 2019 ID _____; Name_____

1. Consider a water pipeline from your home to 10 km away. Probability of finding any fracture is equal over 10 km. X ~ U(0,10). (a) Find PDF for X and Draw. (b) Find CDF for X and Draw. (c) Find the probability that any fracture is found between 6 and 9 km. (d) Show the found probability for (c) on both (a) and (b). Show your calculation. For your figures in (a) and (b), don't forget to label important values.

2. At HU chocolate factory the amounts of chocolate used for 100g chocolate bars are supposed to be normally distributed with mean 100g and standard deviation 5g. Once every 30 minutes a bar is selected from the production line, and its contents are noted precisely. If the amount of chocolate is 95g or above 104g., then the bar fails the quality control inspection.

(a) What percent of chocolate bars cannot pass the quality inspection?

(b) What is the probability that a chocolate bar contains between 92 and 98g?

(c) What is the cut-off weight for the minimum 10% of entire production?