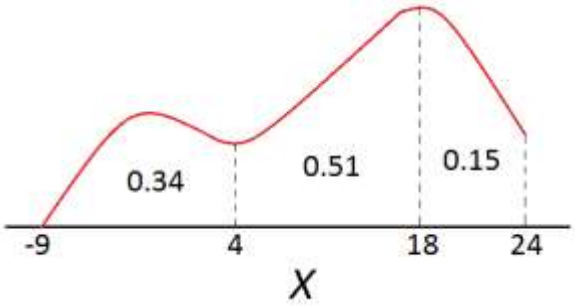
Name:_____ Math 130 Day 10 In Class Worksheet

Date: Section 7.1: Continuous Random Variables

1. Let X be a random variable with the following density curve.



a) Does the curve above represent a probability distribution?

b) What are the possible values of X ?

c) Find $P(4 \leq X \leq 18)$

d) Find $P(-9 \leq X \leq 18)$

e) Find $P(4 \leq X \leq 31)$

f) Find $P(X = 18)$

g) Explain the meaning of the probabilities found in (c)-(f)

2. Suppose X has a uniform distribution over the interval [8, 47].

a) What are all possible values of X ? b) Find the value of c that makes this curve a probability distribution

c) Find $P(40 \leq X \leq 47)$ d) Find $P(16 \leq X \leq 30)$ e) Find $P(3 \leq X \leq 21)$ f) Find $P(X = 17)$

g) Explain the meaning of the probabilities found in (c)-(f)

3.

a) In order to know which normal distribution you are working with, what 2 quantities need to be told to you?

b) Draw a normal distribution with mean 20 and standard deviation 5

c) If X has a normal distribution, what are all possible values of X ?

d) What is the area under the entire curve for any normal distribution curve?

e) What is the mean of the standard normal distribution random variable?

f) What is the standard deviation of the standard normal distribution random variable?

g) What letter do we use when talking about the random variable that has the standard normal distribution?

h) Draw a standard normal distribution curve

i) What are all possible values of Z ?

j) What is the area under the entire standard normal distribution?