

Homework 6a

Math 118 section 004

Due: Monday, March 31st, 2008

1. Suppose a bag of candy is supposed to weigh 200g. According to the manufacturer, the actual weight of the bags are normally distributed with mean 200g, and standard deviation 2g. Answer the following questions:
 - (a) What are the odds a bag weighs between 198g and 202g?
 - (b) What are the odds a bag weighs more than 204g?
 - (c) What are the odds a bag weighs less than 202g?

Suppose a shipment of candy contains 400 bags.

- (d) How many bags would you expect to weigh less than 198g?
- (e) How many bags would you expect to weigh between 198g and 200g?
- (f) How many bags would you expect to weigh more than 200g?
- (g) How many bags would you expect to weigh more than 206g?

2. Suppose a die is rolled 72 times. Let the random variable X denote the number of times a 1 or a 2 is rolled. Answer the following questions:
- (a) Find the mean and standard deviation of X .
 - (b) Find the probability that a 1 or 2 is rolled less than 24 times.
 - (c) Find the probability that a 1 or 2 is rolled between 20 and 28 times.
 - (d) Find the probability that a 1 or 2 is rolled more than 28 times.