STAT 1450, Quiz #4, Fall 2013   Name ___KEY___

Instructions: Show all work. If you use your calculator, indicate which functions you used. Use exact values or report 3 decimal places.

Problems may refer to the data in the table shown below.

	Tall	Short	Average	
Blonde hair	15	22	53	90
Brunette	21	43	77	141
Red hair	7	4	11	22
	43	69	141	253

1. What is the probability that a randomly selected someone in our data set has blonde hair?

$$\frac{90}{253} \approx 35.6\%$$

2. What is the probability that a randomly selected someone in our data set is short?

$$\frac{69}{253} \approx 27.3\%$$

3. What is the probability that a randomly selected someone in our data set is either short or blonde?

$$P(Blonde) + P(Short) - P(Short\ and\ Blonde) =$$
$$\frac{90}{253} + \frac{69}{253} - \frac{22}{253} = \frac{137}{253} \approx 54.2\%$$

4. What is the probability that someone in our data set is both average and red-haired?

$$\frac{11}{253} \approx 4.35\%$$

5. What is the probability that someone is tall given that they are brunette?

$$P(tall\ |\ brunette) = \frac{P(tall\ and\ brunette)}{P(brunette)} = \frac{21/253}{141/253} \approx 14.9\%$$

6. If we randomly selected 5 people from our data set, what is the probability that 2 or more of them would have red hair?

binomial $1 - P(1\ or\ fewer) =$
$1 - binomialcdf(5, .0869, 1) = 1 - .9367 =$
$$.063 = 6.3\%$$