Name:

Elementary Statistics **HW 5.2 - Part 2**

For questions 1-6, identify the given values as a discrete random variable, continuous random variable, or not a random variable:

1. Exact weights of quarters now in circulation in the United States

2. Numbers of tosses of quarters required to get heads

3. Responses to the survey question: "What is your favorite sport to play?"

4. Numbers of spins of a roulette wheel to get the number 7

5. Exact foot lengths of humans

6. Shoe sizes (such as 8 or 8½) of humans

For questions 7-8, use the given data to fill in the table and answer parts a-c.

7. Four males with an X-linked genetic disorder have one child each. The random variable x is the number of children among the four who inherit the X-linked genetic disorder.

Number of children with Inherited genetic disorder x	**P(x)**	$x \cdot P(x)$	$x^2 \cdot P(x)$
0	0.0625		
1	0.2500		
2	0.3750		
3	0.2500		
4	0.0625		

a. Find the mean of the probability distribution.

$$\mu = \sum [x \cdot P(x)]$$

b. Find the variance of the probability distribution.

$$\sigma^2 = \sum [x^2 \cdot P(x)] - \mu^2$$

c. Find the standard deviation of the probability distribution.

$\sigma = \sqrt{\sigma^2}$

8. When conducting research on color blindness in males, a researcher forms random groups with five males in each group. The random variable x is the number of males in the group who have a form of color blindness (based on data from the National Institutes of Health).

Number of males in group that have color blindness x	**P(x)**	$x \cdot P(x)$	$x^2 \cdot P(x)$
0	0.659		
1	0.287		
2	0.050		
3	0.004		
4	0.001		
5	0+		

a. Find the mean of the probability distribution.

$\mu = \sum [x \cdot P(x)]$

b. Find the variance of the probability distribution.

$\sigma^2 = \sum [x^2 \cdot P(x)] - \mu^2$

c. Find the standard deviation of the probability distribution.

$\sigma = \sqrt{\sigma^2}$