

1. True/False

___ The standard deviation of the sample mean is always equal to the standard deviation of the population.

___ The number of defective vending machines on a college campus is an example of a continuous random variable.

___ Every normal distribution has a mean = 0 and standard deviation = 1.

___ A binomial random variable is a discrete random variable.

2. Which of the following is a valid probability distribution?

a) $\frac{x}{p(x)}$	b) $\frac{x}{p(x)}$	c) $\frac{x}{p(x)}$	d) $\frac{x}{p(x)}$
0 .30	-3 .35	0 .36	-8 .24
1 .20	0 .65	3 .52	-4 .65
2 .40	3 -.10	6 .22	0 .11

3. Suppose in a recent national election, 40% of the voters were men. If a random sample of 25 voters was selected, what is the probability that more than 10 but less than 20 were women?

4. A traffic study conducted at one point on an interstate highway shows that vehicle speeds are normally distributed with a mean of 63.5 miles per hour and a standard deviation of 4.8 mph.

- a) If a vehicle is randomly selected, what is the probability that its speed is between 55 and 65 mph?
- b) 60% of the speeds in the distribution exceed what value?

5. Find the mean and variance of the following probability distribution:

X		-9	1	4
P(x)		.3	.4	.3

Answer Key

1. F, F, F, T
2. d
3. .937
4. a) .5833 b) 62.3mph
5. a) -1.1 b) 28.29