

Elementary Statistics	Name: _____
Extra Credit 3	Class: _____
Due Date: _____	Score: _____

No Work  $\Leftrightarrow$  No Points

Use Pencil Only  $\Leftrightarrow$  Be Neat & Organized

1. Study shows that 30% of college students carpool to school. If we randomly select 80 college students,

(a) (4 points) Find the mean and standard deviation for number of students that carpool to school.

(a) \_\_\_\_\_

(b) (3 points) use normal distribution to estimate the probability that there will be at least 20 students that carpool to school.

(b) \_\_\_\_\_

(c) (3 points) use normal distribution to estimate the probability that the number of college students that carpool is between 20 and 30 inclusive.

(c) \_\_\_\_\_

2. In LA County, the conviction rate for speeding is 85%. For the next 100 speeding summonses,

(a) (3 points) Find the mean and standard deviation for number of convictions.

(a) \_\_\_\_\_

(b) (3 points) Use normal distribution to estimate the probability that there will be exactly 80 convictions.

(b) \_\_\_\_\_

(c) (3 points) Use normal distribution to estimate the probability that there will be fewer than 80 convictions.

(c) \_\_\_\_\_

(d) (3 points) Use normal distribution to estimate the probability that the number of convictions exceeds 90.

(d) \_\_\_\_\_

(e) (3 points) Use normal distribution to estimate the probability that there will be between 77 and 93, inclusive convictions.

(e) \_\_\_\_\_

3. A CNN study reveals that 80% of women are in favor of stricter gun control. If we randomly select 400 women,

(a) (2 points) Find the mean for the number of women that are in favor of stricter gun control.

(a) \_\_\_\_\_

(b) (2 points) Find the variance for the number of women that are in favor of stricter gun control.

(b) \_\_\_\_\_

(c) (1 point) Find the standard deviation for the number of women that are in favor of stricter gun control.

(c) \_\_\_\_\_

(d) (3 points) Use normal distribution to estimate the probability that the number of women in favor of stricter gun control is exactly 310.

(d) \_\_\_\_\_

(e) (3 points) Use normal distribution to estimate the probability that the number of women in favor of stricter gun control is at most 310.

(e) \_\_\_\_\_

(f) (3 points) Use normal distribution to estimate the probability that the number of women in favor of stricter gun control is fewer than 310.

(f) \_\_\_\_\_

(g) (3 points) Use normal distribution to estimate the probability that the number of women in favor of stricter gun control is at least 310.

(g) \_\_\_\_\_

(h) (3 points) Use normal distribution to estimate the probability that the number of women in favor of stricter gun control exceeds 310.

(h) \_\_\_\_\_

(i) (3 points) Use normal distribution to estimate the probability that the number of women in favor of stricter gun control is between 304 and 336, inclusive.

(i) \_\_\_\_\_

(j) (2 points) Find (Not Estimate) the probability that the number of women in favor of stricter gun control is between 304 and 336, inclusive?

(j) \_\_\_\_\_

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