Test 4 SHORT ANSWER QUESTIONS

1. Are CIs and HTs about variances (or standard deviations) considered risky compared to CIs and HTs about means?
2. Are the distributions symmetric?
3. Are the *F* distributions symmetric?
4. What is the area under a  curve?
5. What is the area under a *F* curve?
6. If = 12 and the population is normal, what is the shape of all the for samples of size 25?
7. When comparing variances, what arithmetic operation is used?
8. Suppose X and Y are independent normal populations. What is the shape of  where the sample sizes are of size 10 for X and size 8 for Y?
9. In a continuous distribution the mean is the area under what curve?
10. The area under *xp(x)* gives what value in the continuous case?
11. The area under *p(x)* gives what value in the continuous case?
12. The area under gives what value in the continuous case?
13. What is the meaning of ?
14. Variance is similar to  which tells what in everyday terms?
15. Is variance an average?
16. Variance is the average of what?
17. Describe what the standard deviation is in words.
18. If a set of data is normal with a mean of 40 and a standard deviation of 8, what shape will the data have if each piece of data has 40 subtracted and then that result divided by 8?
19. If a set of data is normal with a mean of 40 and a standard deviation of 8, what will be the mean of the data have if each piece of data has 40 subtracted and then that result divided by 8?
20. If a set of data is normal with a mean of 40 and a standard deviation of 8, what will be the standard deviation of the data have if each piece of data has 40 subtracted and then that result divided by 8?
21. We came up with the formula for P(A | B) by taking a sports team and making a fraction for P(W | H) and the top of the fraction represented what?
22. We came up with the formula for P(A | B) by taking a sports team and making a fraction for P(W | H) and the bottom of the fraction represented what?
23. How can you turn “how many” into “probability”?
24. True or False: P(A and B) and P(A | B) are just two ways to write the same thing?
25. True of False: P(A | B) is the same as P(B | A)?
26. Explain what P(A | B) = P(A) means in everyday terms.
27. If P(A | B) = P(A) as well as P(B | A) = P(B) we say that A and B have what property?
28. If X and Y are independent then P(X | Y) = what?
29. To figure out how many ways a multi-step process can be done you do what?
30. How many ways can *n* things can be arranged in a row?
31. When finding out how many ways to pick 6 numbers from 42 numbers in a lottery in which order does not matter we first (incorrectly) came up with what? We realized that each outcome was being counted 6! times? So we divided by this number and came up with the correct answer of (42)(41)(40)(39)(38)(37)/6!
32. When finding out how many ways to pick 6 numbers from 42 numbers in a lottery in which order does not matter we first (incorrectly) came up with (42)(41)(40)(39)(38)(37). We realized that each outcome was being counted how many times? So we divided by this number and came up with the correct answer of (42)(41)(40)(39)(38)(37)/6!
33. When finding out how many ways to pick 6 numbers from 42 numbers in a lottery in which order does not matter we first (incorrectly) came up with (42)(41)(40)(39)(38)(37). We realized that each outcome was being counted 6! times. So we divided by this number and came up with the correct answer of what?
34. The formula for the probability of getting exactly *k* successes in *n* trials, , is a combination of multiplying in a tree diagram and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
35. The formula for the probability of getting exactly *k* successes in *n* trials, , is a combination of the lottery formula and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
36. When using the normal to approximate the binomial the probability of exactly 6 successes is approximately the area from \_\_\_\_\_ to \_\_\_\_, and this is why we add or subtract .5 when using the normal approximation for the binomial.
37. In the binomial setting what does *n – k* represent?
38. In the binomial setting what does  represent?
39. In the binomial setting what does *np* represent?
40. In the binomial setting what does *nq* represent?