MTH 324, Quiz #5, Fall 2022   Name _____

Instructions: Answer each question as thoroughly as possible. Round answers to 4 decimal places as needed. Exact answers are best when possible. Be sure to answer all parts of each question.

1. A certain soft drink bottler claims that less than 20% of its customers drink another brand of soft drink on a regular basis. A random sample of 100 customers yielded 18 who did in fact drink another brand of soft drink on a regular basis. Do these sample results support the bottler's claim? (Use a level of significance of 0.05.) Clearly state your null and alternative hypothesis, check any assumptions, and clearly state your conclusion in the context of the problem.

2. Your company wants to improve sales. Past sales data indicate that the average sale was $112 per transaction. After training your sales force, recent sales data (taken from a sample of 25 salespeople) indicates an average sale of $137, with a standard deviation of $12.75. Did the training work? Test your hypothesis at a 5% alpha level. Clearly state your null and alternative hypothesis, check any assumptions, and clearly state your conclusion in the context of the problem.