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See the written assignment instructions, posted separately. Each problem is equally weighted.

1. Find z such that $P(-z < Z < z) = 0.94$, where Z is the Standard Normal random variable. Provide a rough sketch of the curve with the region shaded to illustrate.

2. Suppose a student's score on a standardized test to be a continuous random variable whose distribution follows the Normal curve. (a) If the average test score is 510 with a standard deviation of 100 points, what percentage of students scored below 300? (b) What score puts someone in the 90th percentile? Start by finding z such that $P(Z < z) = 0.90$, then find what test score has that z value.

3. In a box of tickets, 25% of the tickets are labeled 1, and 75% of the tickets are labeled 0. If you draw 36 times with replacement, what is the probability that the numbers you draw will add up to something between 6 and 12 (inclusive)? Use the Normal approximation to the Binomial distribution to estimate the answer.

4. Give 40 people each a well-shuffled deck of cards and ask everyone to draw one card from his or her deck. What is the probability that at least 5 of the people will draw a queen? Estimate the answer with the Normal curve.