Name: _____
Date: _____

Unit 7 Quiz

Unit 7

Proportions:

$$CI = \hat{p} \pm z \cdot \sqrt{\frac{\hat{p}\hat{q}}{n}} \quad \text{or} \quad \hat{p} - E \le p \le \hat{p} + E$$

$$n = \frac{z^2 \hat{p}\hat{q}}{E^2} = \hat{p}\hat{q}\left(\frac{z}{E}\right)^2$$

Answer the following 3 questions. **Show your work (or explain your calculations)**. Round all answers to 5 decimal places! Formulas are provided above if needed (these are the same ones you'll have for the test ☺)

1. From a random sample of 65 students, 40% said they prefer to wake up to do their homework rather than stay up late. If appropriate, calculate and interpret the 98% confidence interval.

2. Find the Margin of Error from the interval you found in Question 1.

3. How large would the sample size have to be to make the Margin of Error half as big in the 98% confidence interval?