

Name: \_\_\_\_\_

**MATH 108**

**Spring 2024**

**HW 14: Due 03/27**

*“I got Luke a video game but it’s about Math  
so I guess we’re those kind of uncles.”*

*— Mitchell Pritchett, Modern Family*

**Problem 1.** (10pts) Researchers are trying to determine how much households are spending on streaming services each year. They take a simple random sample of 76 individuals and ask them how much they spend on streaming services each year. They find an average of \$396 per year. Construct a 88% confidence interval for the amount that households spend on streaming services on average each year. [Assume that it is known that  $\sigma = \$60$ .]

**Problem 2.** (10pts) Economists are examining the effects of recent high inflation. They take a large survey of 15,000 individuals. It is estimated that because of recent inflation, 56% of households have experienced some type of financial hardship over the last year. Use the normal approximation to the binomial distribution to find the probability that between 8,260 and 8,536 individuals surveyed have experienced some type of financial hardship over the last year.