

exercise_2_2

Lindsey Greenhill

2/3/2021

Problem 2a. Page 27 of textbook

Problem 2b

```
# use the chi-squared test to do this with 23 df. Finding the upper and lower bound and seeing if the c  
# finding the chi sq test statistic  
chisq <- ((23) * sd_actual^2) / std_theoretical^2  
  
# not really sure what the stuff below is for?  
  
lower_bound <- qchisq(.05/2, df = 23)  
upper_bound <- qchisq(.975, df = 23)  
  
# calculating the p value  
  
p_val <- 2*pchisq(chisq, df = 23)  
  
# calculating confidence interval  
  
upper_real <- sqrt(23*24^2 / lower_bound)  
lower_real <- sqrt(23*24^2 / upper_bound)
```

Problem 3

```
sums <- rep(NA, 1000)  
  
for(i in 1:1000){  
  noms <- runif(20, 0, 1)  
  
  noms_sum <- sum(noms)  
  
  sums[i] <- noms_sum  
}  
  
# plotting a histogram  
{
```

```
hist(sums, main = "Distribution of 1000 Sims of Draws(0,1)",
     probability = TRUE, las = 1)
curve(dnorm(x=x, mean = mean(sums), sd = sd(sums)),
      col = "steelblue2", lwd = 2, add = TRUE, yaxt = "n")
}
```

