Homework week 3:

1. Does our sample equally represent all 50 states?

When looking to see if 2% of the population could be represented by our data the result I came back with when performing the function with an extremely low P value of 2.2e-16. This looks to be extremely unlikely to be a normally distributed data set and is unlikely to be representative of the data. Given this data we reject the hypothesis that the subsidies in each state are evenly distributed.  
  
Results: X-squared = 3137900, df = 49, p-value < 2.2e-16

2. Does our sample equally represent all 50 states, weighted by number of farms/state?

Pearson's Chi-squared test

data: by\_state\_data$amount\_sum and by\_state\_data$farm\_weights

X-squared = 2450, df = 2401, p-value = 0.2382

After weighting by the amount spent on farm subsidies the data looks like it could be an event distribution of subsidies based on the number of farms. What this is actually telling us however is that the amount spent on a per farm basis is not changed by the state the farm is located in. This does not tell us much about how many farms are in these states that don’t receive subsidies. Given this information and data we fail to reject the hypothesis that our data is evenly distributed based on the subsidies per farm in states.

