1. The total incarcerated population has changed significantly from 2012 to 2016
   * Ho: The mean prison population has not changed significantly year over year
   * Ha: The mean prison population has changed significantly year over year
   * Aggregate state totals
   * Two-tailed t-test (dependent)
   * Z test/one sample t-test, 1 continuous target, difference
   * Linear relationship/correlation
   * QUESTIONS:
     1. How to do aggregate test (linear regression) for all years??
     2. Right now, compare 2012 and 2016; Andrew will check and circle back on the rest
2. The proportion of incarcerated people to the total population differs in correlation with whether a state has R or D senators
   * Calculate proportion of incarcerated population to total and add a column
   * Rep. vs Dem., get data on Senate composition from <https://projects.propublica.org/api-docs/congress-api/members/> (pick 1 year unless extra time… also election year)
     1. Group R vs. D (visualization)
     2. Logistic regression?
     3. two sample t-test, repeated measures

1 continuous target, 1 categorical factor (2

levels), difference = = = \*\*maybe\*\* for the 5 years of D/R vs pop?

* + Ho: There is no difference in the total incarcerated population between states with R and D senators
  + Ha: There is a difference (greater or less than) between the proportion of incarcerated persons to total population between R and D states

1. [Exceptionally high state having more exonerations for murder than the average] is predicted to have a higher rate of incarceration for murder
   * Ho: The exoneration rate has no effect on the incarceration count for murder
   * Ha: The exoneration count for murder is correlated with a higher incarceration count for murder
   * Z test/one sample t-test, 1 continuous target, difference
2. New York’s exoneration rate for murder relative to total state population is predicted to be lower than the average of other states.
   * Ho: The exoneration rate for murder (exoneration count/population) for NY is the same or higher than the exoneration rate for murder in other states.
   * Ha: The exoneration rate for murder (exoneration count/population) for NY is lower than the exoneration rate for murder in other states.
   * Z test/one sample t-test, 1 continuous target, difference