

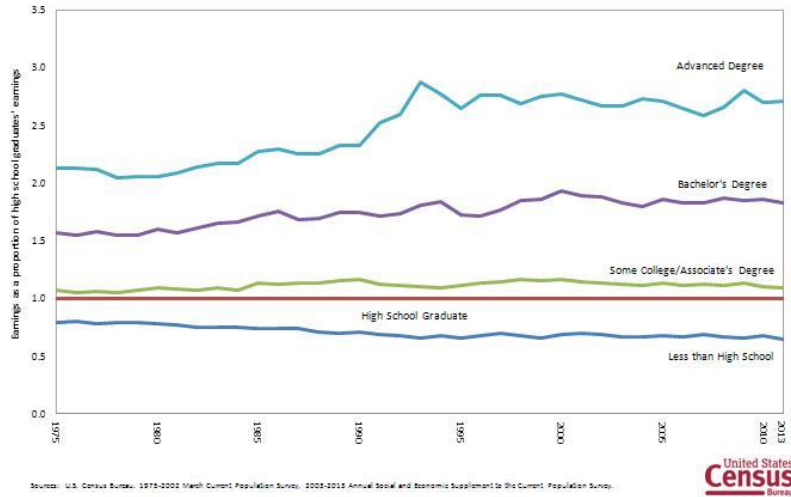
Instructions: Work problems on a separate sheet of paper and attach work to this page. You should show all work to receive full credit for problems. Questions with compact answers can be recorded directly on this page. Graphs and longer answers that won't fit here, indicate which page of the work the answer can be found on and be sure to clearly indicate it on the attached pages. You may use Excel to complete the problems, but then submit Excel files online.

1. A newspaper article on drunk driving cited data on traffic deaths in Rhode Island: "Forty-two percent of all fatalities occurred on Friday, Saturday and Sunday, apparently because of increased drinking on the weekends." What percent of the week do Friday, Saturday and Sunday represent? Are you surprised that 42% of fatalities occur on those days? How might data for the number of cars on the road on those days possibly change or reinforce that perception?
2. An article in a Midwestern newspaper about flight delays at a major airport said: 'According to a Gannet News Service study of US airline's performance during the past five months, Chicago's O'Hare Field scheduled 114,370 flights. Nearly 10%, 1,136 were canceled.' Check the paper's arithmetic. What percent of scheduled flights were actually cancelled?
3. The number of Americans living below the poverty line increased from 24,975,000 to 43,569,000 in the 34 years between 1976 and 2009. What percentage increase was this? You should not conclude from this that poverty grew more common in the US during these years. Why not?
4. Do a search for 'dubious statistics' on the web. Select one of the articles. Describe the dubious use of statistics in the cited research. What makes the use of stats dubious in the case you chose?
5. Go to the website <http://www.census.gov/> and select a statistic they measure to analyze. It's preferable to choose something that changes over time. Choose two data points and describe the percentage change between them. Be sure to clearly state that statistics you are using and the dates associated with them.
6. Create a pie chart for the following data. Copy the data into Excel and create a summary table to start. A sample of 20 students who had recently taken elementary statistics yielded the following information on the brand of calculator owned (T=Texas Instrument, H=Hewlett Packard, C=Casio, S=Sharp). Be sure that your graph is properly labeled, displays the percents and has a title.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| T | T | H | T | C | T | T | S | C | H |
| S | S | T | H | C | T | T | T | H | T |

7. Below are a series of graphs. Interpret the graph. For time series graphs compare information from two points in time and say something about the information obtained from the graph. Is there a better way of displaying the data that might make the comparison you choose more salient? Explain what kind of graph you are looking at. If this qualifies as a 'bad graph' what is bad about it?

Figure 10: Average Earnings of Full-Time, Year-Round Workers as a Proportion of the Average Earnings of High School Graduates by Educational Attainment: 1975 - 2013

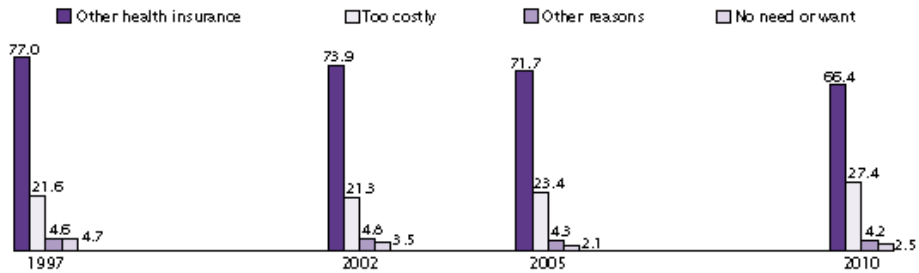


Source: U.S. Census Bureau, 1975-2002 March Current Population Survey, 2003-2012 Annual Social and Economic Supplement to the Current Population Survey.



a)

Figure 3. Most Common Reasons for Nonparticipation by Workers Who Chose Not to Participate in Jobs With Employer-Offered Health Insurance: 1997, 2002, 2005, and 2010 (In percent)

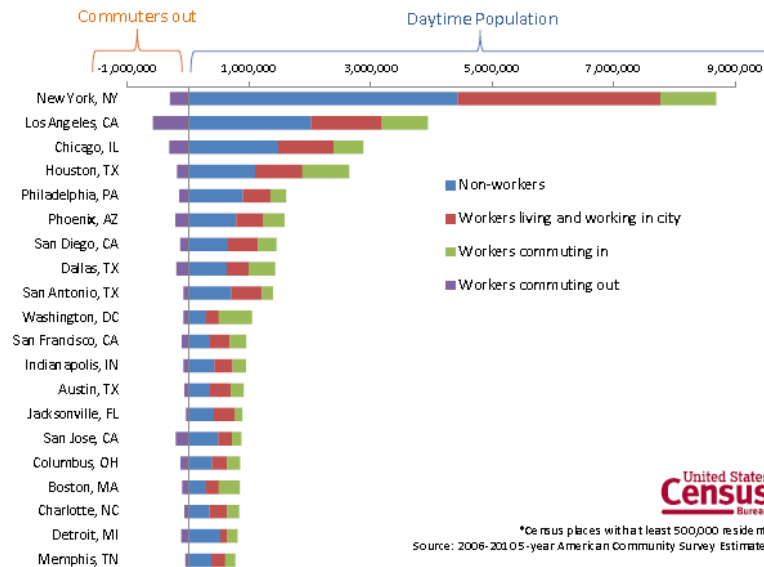


Notes: "Other reasons" category is composed of write-ins. Categories do not sum to 100 percent since respondents may select more than one category.

Source: U.S. Census Bureau, Survey of Income and Program Participation (1996, 2001, 2004, and 2008 Panels).

b)

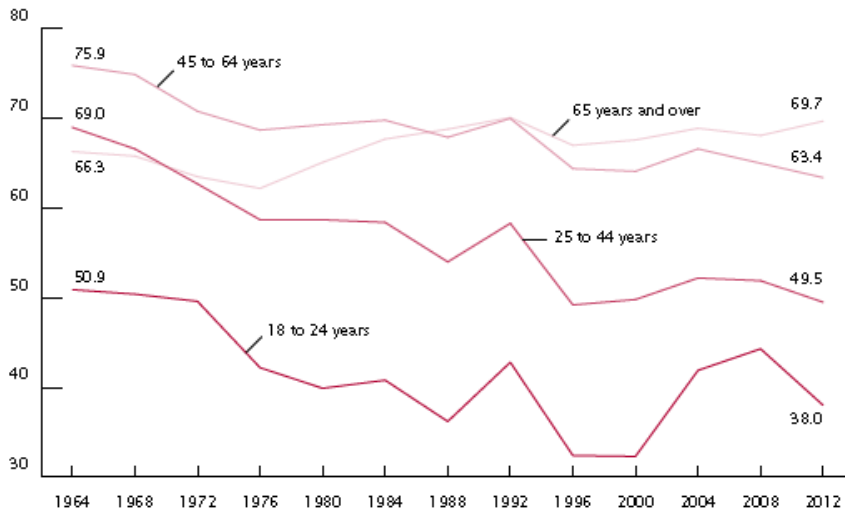
Cities among the Top 20 for Commuter-Adjusted Population*
2006-2010 5-year American Community Survey



*Census places with at least 500,000 residents.
Source: 2006-2010 5-year American Community Survey Estimates.

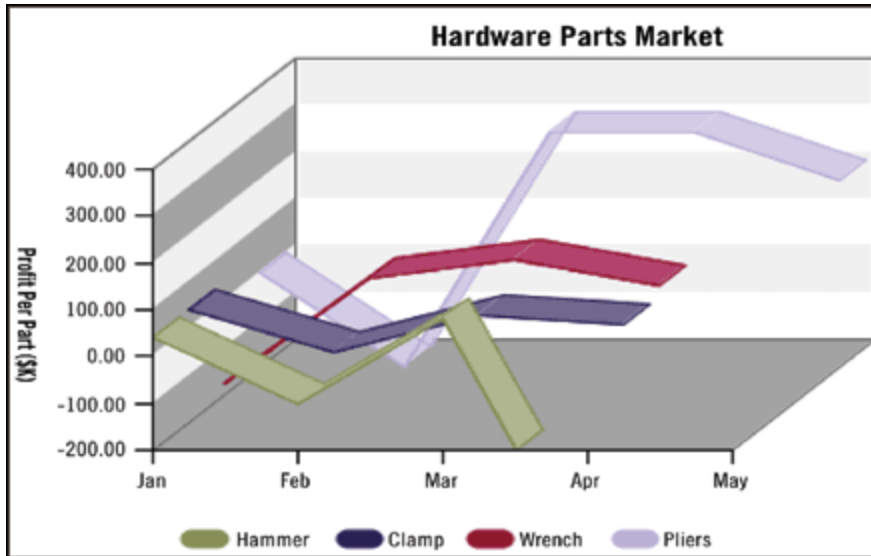
c)

Figure 1.
Voting Rates Over Time for the Voting-Age Population: 1964-2012
 (In percent)

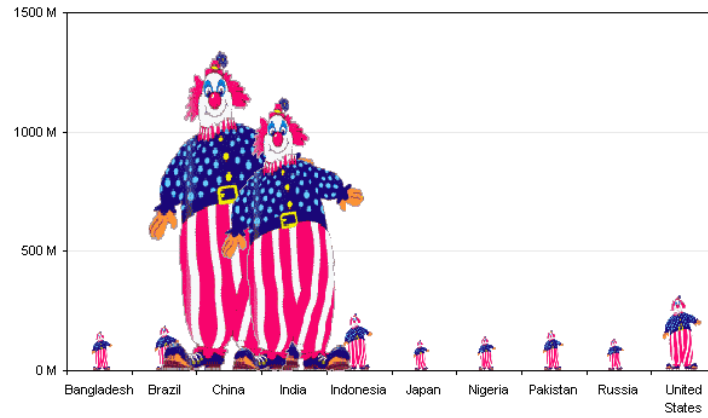


Source: U.S. Census Bureau, Current Population Survey, Select Years.

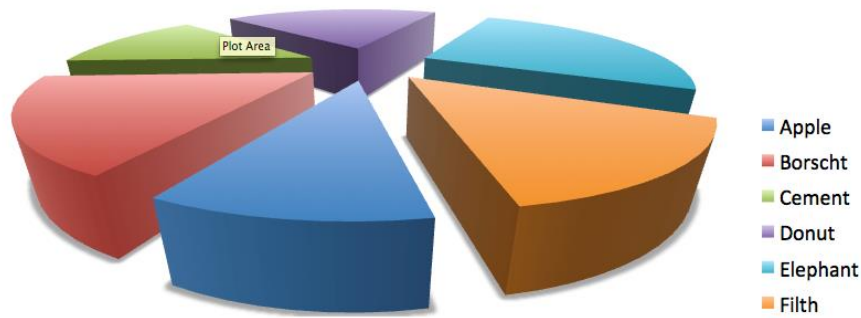
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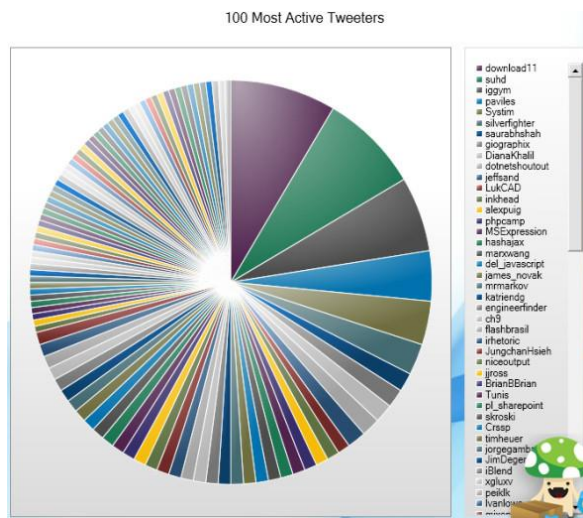
e)



f)



g)



h)

8. Using the Excel file 154data2.xlsx to answer the questions below:
- Create a comparative Bar Graph of States of Birth for American Presidents, and a separate one for the state they represented at the time they were elected. Write a paragraph summarizing the graphs.
 - Use the data on the Favorite Day to Eat Out to create a pie or donut graph of the data. Be sure it is properly labeled and is easy to understand. Write a sentence or two that summarizes the result.
 - Use the data on percent of poverty on the third sheet to create a line graph of the data.
 - Use the same data to calculate the percent change from year to year. Then make a line graph of the resulting data. Note: Percent change should be signed, so that an increase will be positive, and a decrease will be negative. Make sure your line graphs have axis labels, a title and are easy to read.