



9. Suppose 2 cards are drawn without replacement from a deck of 52 cards. Find the probability that:
- two cards from the same suit are drawn.
  - two face cards are drawn.
  - a pair is drawn.
  - a pair of aces is drawn.
10. A researcher wants to find out who will win the upcoming presidential election. To find out about this, she goes out to the local shooting range and asks people to fill out a survey. Although many people are not willing to take the time to answer, she eventually gets 50 responses. Of those that responded, 11 people say they plan to vote for Barack Obama, 7 people say they plan to vote for Hillary Clinton, and 32 people say they plan to vote for John McCain.
- What is the population in this survey? What is the sample?
  - What forms of bias, if any, may have effected the data collected in this survey? Explain your reasoning.
  - Based on this study, what conclusions, if any, can be reached about who will win the upcoming Presidential election? Explain your reasoning.
11.
  - Give an example of a real life situation where the mean is the most appropriate measure of central tendency.
  - Give an example of a real life situation where the median is the most appropriate measure of central tendency.
  - Give an example of a real life situation where the mode is the most appropriate measure of central tendency.
12. Suppose that you got scores of 78, 85, 82, and 75 on 4 exams worth 100 points each.
- What grade would you need to get on a 200 point final exam in order to end up with an average of 70 percent?
  - What grade would you need to get on a 200 point final exam in order to end up with an average of 80 percent?
  - What grade would you need to get on a 200 point final exam in order to end up with an average of 90 percent?
13. Given the data set  $\{2, 5, 12, 21, 27, 13, 6, 11, 5, 12, 24, 7\}$
- Find the mean, median, and mode of this data set.
  - Make a stem and leaf display for this data set.
  - Find the 5 number summary of this data set.
14. Given the following frequency table: Frequency Histogram:
- | $x$ | frequency |
|-----|-----------|
| 5   | 7         |
| 9   | 4         |
| 12  | 3         |
| 15  | 8         |
| 21  | 6         |
- In the space provided above, make a frequency histogram for the data in the table above.
  - Compute the mean and median of the data in this table.
15. Find the mean and standard deviation of the data set:  $\{3, 7, 12, 14, 17, 25\}$

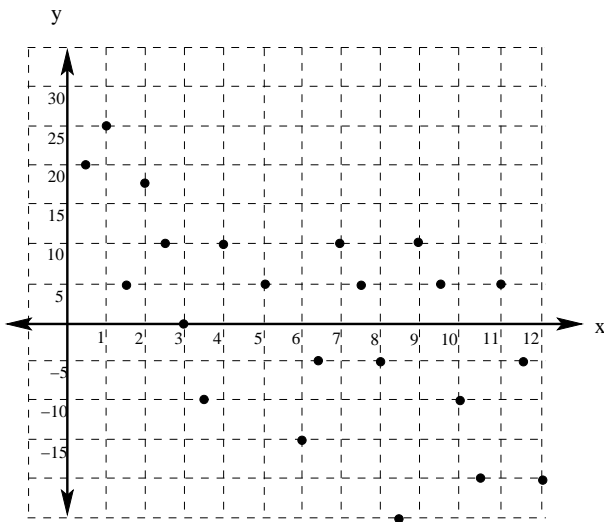
16. Suppose that 500 test scores (on a 100 point test) are approximately normally distributed with a mean of 72, and a standard deviation of 6.

- (a) What percentage of scores are above 85 points?
- (b) How **many** scores are below 50 points?
- (c) What percentage of scores are between 65 and 80 points?
- (d) What score would a person need to get on the test in order to have scored higher than 70% of the people who took this test?

17. A 16oz jar of peanut butter cost \$1.78 in 1995. In 2005, a similar jar cost \$2.99.

- (a) Find a line that models the price of peanut butter over time (hint: you can take  $x = 0$  to represent 1995)
- (b) Use your model to predict the price of peanut butter in 2010.
- (c) According to your model, when will the price of peanut butter reach \$5.00 for a 16oz jar?

18. Given the scatter plot shown here:



- (a) Sketch in an estimated linear regression line for this data.
- (b) Is the correlation coefficient positive or negative for this data?