


# Level D - Form 1 - Applied Mathematics: Data Analysis

## Sample Question

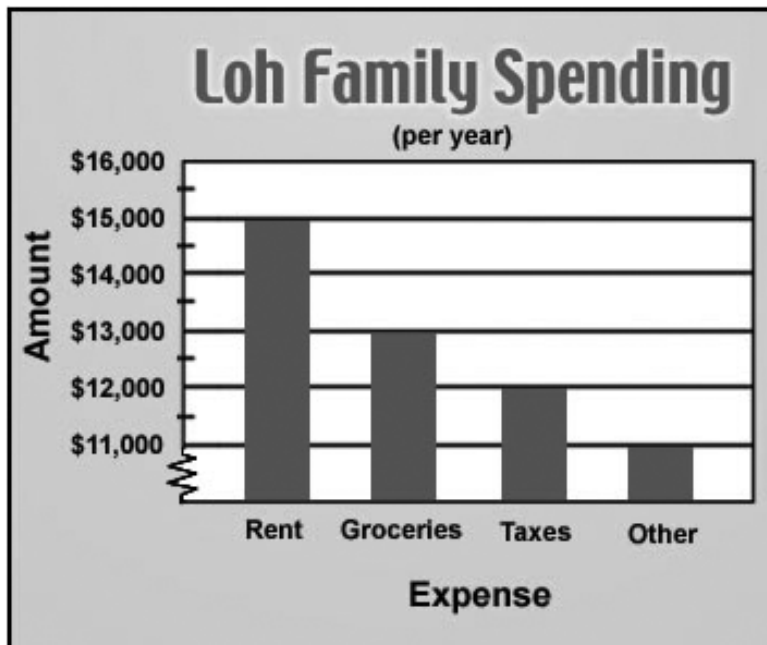
Small.....	\$1.50
Medium.....	\$2.25
Large.....	\$3.50
Jumbo.....	\$4.25 

What is the cost of one large popcorn?

- A \$1.50
- B \$2.25
- C \$3.50
- D \$4.25

# Level D - Form 1 - Applied Mathematics: Data Analysis

The bar graph shows the Loh family expenses for a year. Study the graph. Then do Numbers 1 through 3.



- Which of these is the third greatest expense for the Loh family?
  - rent
  - taxes
  - groceries
  - other
- Which of these statements is true?
  - The family spends more on groceries than on rent.
  - The total yearly expenses are about \$41,000.
  - The amount the family spends on taxes is about four-fifths of what it spends on rent.
  - The family spends about twice as much on taxes as they do on other items.
- This graph would be most useful in showing the Loh family
  - how to spend less on groceries
  - why they spend so much on rent
  - why they spend more on rent than on groceries
  - how to compare the amounts of money they spend in different categories

James is planning a trip. This map shows where he wants to visit. The table lists how many miles he would travel between cities. Study the map. Then do Numbers 4 through 9.

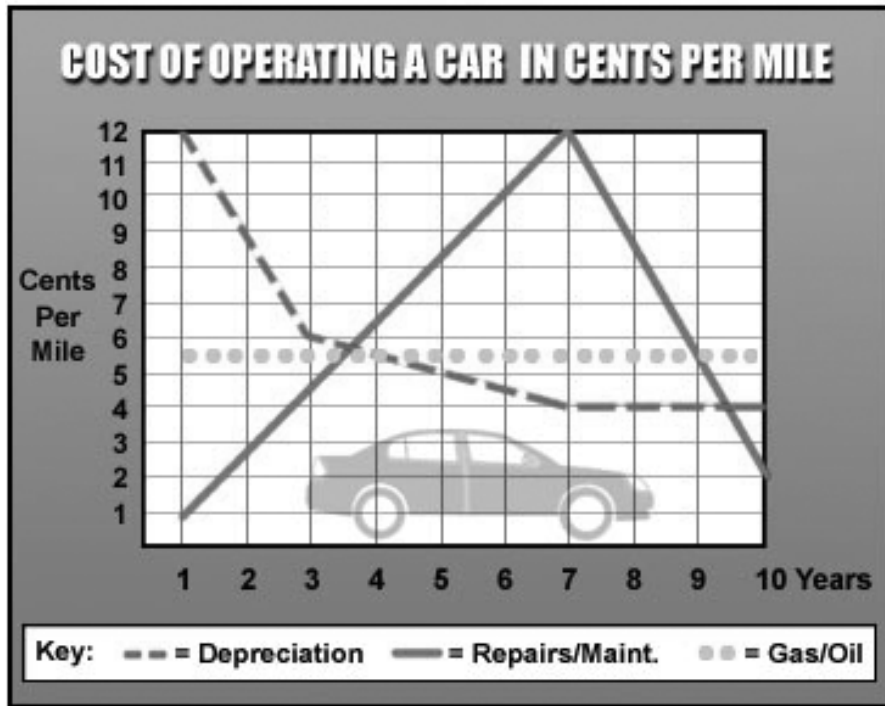


Phoenix to Dallas	850 miles
Dallas to Miami	1,050 miles
Miami to Washington, D.C.	975 miles
Washington, D.C., to New York City	200 miles
New York City to Chicago	750 miles
Chicago to Denver	800 miles
Denver to Seattle	1,050 miles
Seattle to San Francisco	700 miles

- |  |   |
|--|---|
| <p>4. Where does James plan to end his trip?</p> <ul style="list-style-type: none"> <li>F Phoenix</li> <li>G Dallas</li> <li>H San Francisco</li> <li>J Miami</li> </ul> | <p>5. How much farther is it from Dallas to Miami than from New York to Chicago?</p> <ul style="list-style-type: none"> <li>A 200 miles</li> <li>B 250 miles</li> <li>C 300 miles</li> <li>D 350 miles</li> </ul> |
|--|---|

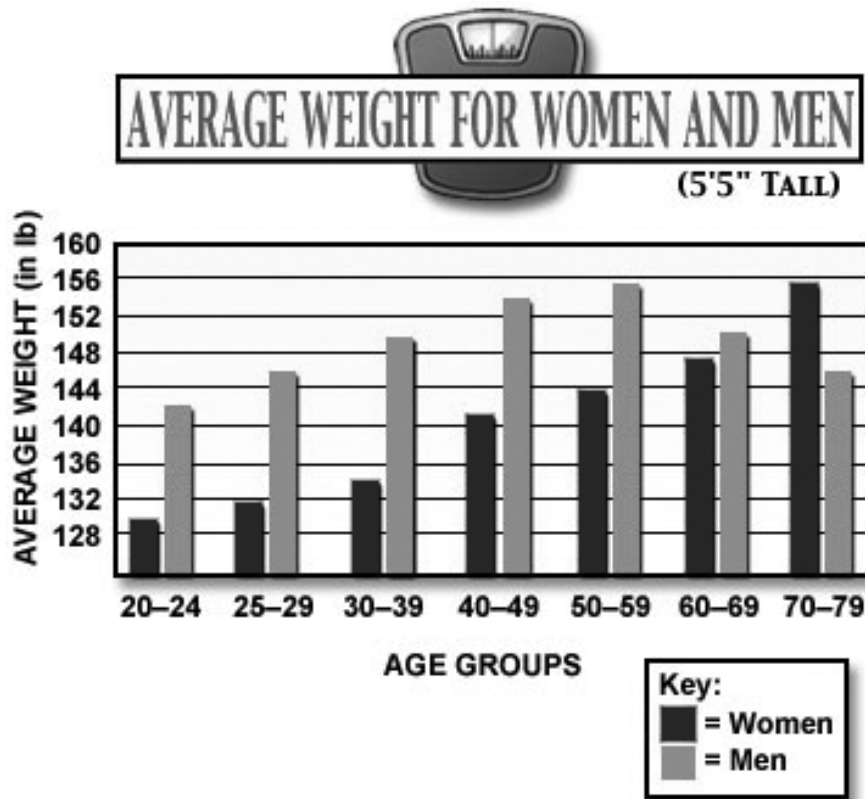
6. Which distance is longer than the distance from Phoenix to Dallas, but shorter than the distance from Denver to Seattle?
- F Chicago to Denver
  - G Dallas to Miami
  - H New York City to Chicago
  - J Miami to Washington, D.C.
7. What information does the map and chart **not** show?
- A the distance between Washington, D.C., and New York
  - B the number of cities James visits
  - C the distance between San Francisco and Phoenix
  - D the order in which he will visit the cities
8. This map and chart are **least** useful for showing
- F the order in which James will visit the cities
  - G the distances between cities
  - H the number of cities James will visit
  - J the best driving routes between cities
9. How could you determine the average distance between the cities?
- A Subtract the shortest distance from the longest distance.
  - B Add the distances between each pair of cities, and then divide the sum by the number of trips.
  - C Add the distances between each pair of cities, and then divide the sum by the number of cities on the map.
  - D Add the shortest and longest distances, and then divide by 2.

The graph shows the operating costs for an average car. Study the graph. Then do Numbers 10 through 12.



10. In which year is the difference between the cost of repairs and cost of depreciation about 5 cents per mile?
- F the first year
  - G the fifth year
  - H the eighth year
  - J the tenth year
11. What type of graph would be the best for showing depreciation as a percentage of the total costs?
- A circle graph
  - B line graph
  - C bar graph
  - D histogram
12. Which of these statements is **not** supported by the information in the graph?
- F Cars depreciate rapidly over the first three years.
  - G Repair costs rise steeply for the first seven years of a car's life.
  - H The older a car gets, the more gas and oil it needs.
  - J All three costs are almost equal between 3 and 4 years.

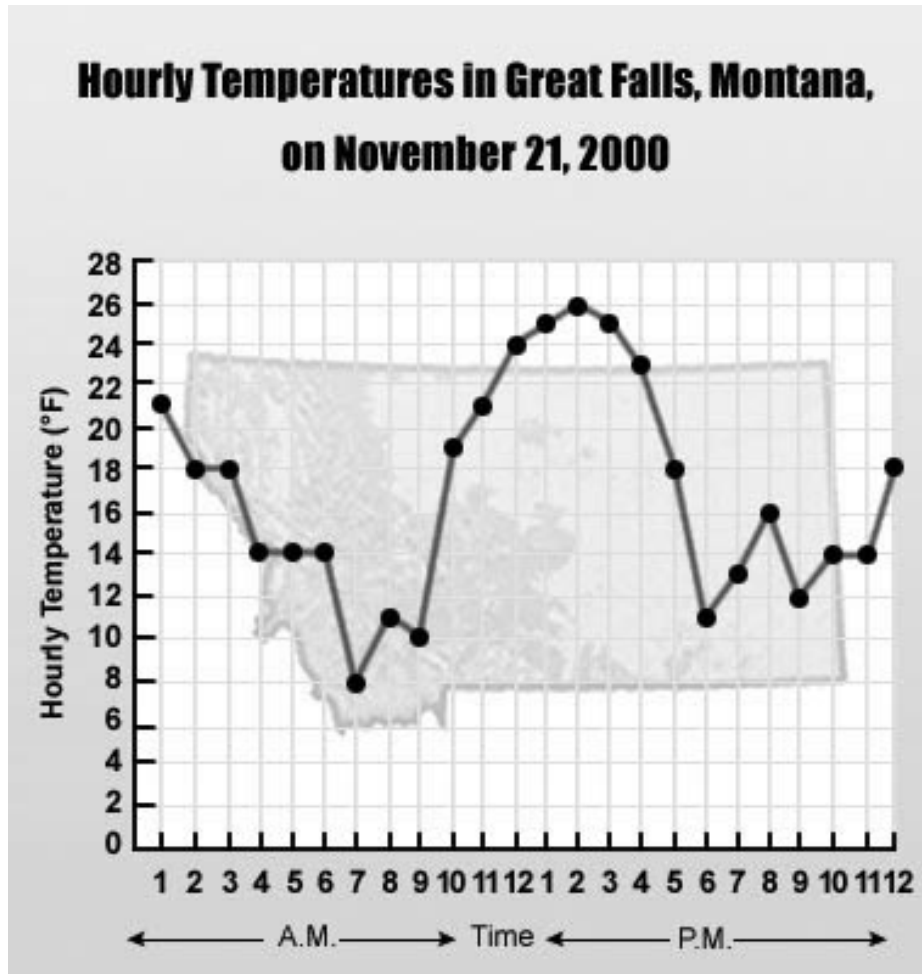
The graph shows the average weight of men and women at different times in their lives. Study the graph. Then do Numbers 13 through 14.



13. For women in the graph, what is the range of average weight?
- A from 142 to 155 lb
  - B from 130 to 155 lb
  - C from 130 to 132 lb
  - D from 148 to 132 lb

14. The average weight for a 5'5" tall man in his fifties is about
- F 144 lb
  - G 150 lb
  - H 152 lb
  - J 155 lb

The graph shows hourly temperatures in Great Falls, Montana, on a day in November. Study the graph. Then do Numbers 15 through 16.



15. Which statement is true?

- A The temperature at 1:00 A.M. was greater than the temperature at midnight.
- B The coldest time of day is around noon.
- C The graph is useful to summer visitors to Great Falls.
- D Visitors to Great Falls would be comfortable without a jacket.

16. Which statement is true?

- F The temperature was never lower than 9°F.
- G The temperature was never higher than 25°F.
- H The temperature dropped steadily from midnight to 6:00 A.M.
- J The temperature increased from 9:00 A.M. to 1:00 P.M.

17. Ronald wishes to draw a graph showing how his family budgets its money. Which type of graph would be most useful for displaying this data?

- A bar graph
- B line graph
- C circle graph
- D pictograph

18. Erika wishes to draw a graph showing the changes in gas prices each month for one year. Which type of graph would be most effective for displaying this data?

- F bar graph
- G line graph
- H circle graph
- J histogram

19. Marshall wishes to draw a graph comparing the current prices for computers at five different stores. Which type of graph would be most effective for displaying this data?

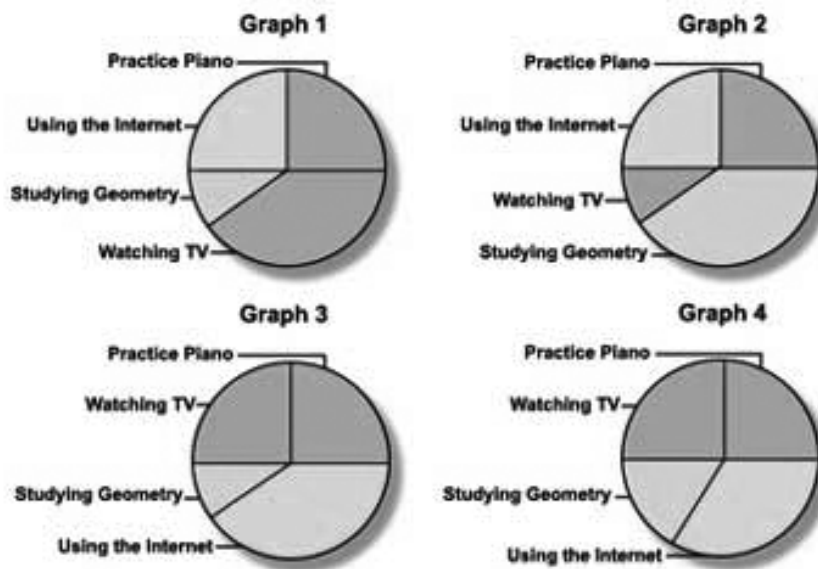
- A bar graph
- B line graph
- C circle graph
- D histogram



The table shows how William divided up his leisure time one evening. One of the circle graphs displays the same information. Study the table and the graphs. Then do Number 20.

## How William Spent His Evening

Activity	Percent of Evening Time
Practicing the Piano	25%
Watching TV	25%
Studying Geometry	10%
Using the Internet	40%



20. Which of these graphs most accurately displays the data presented in the table?

- F Graph 1
- G Graph 2
- H Graph 3
- J Graph 4