2.4 Bar Graphs, Line Graphs, and Tables

You have probably seen tables, bar graphs, and line graphs in newspapers, magazines, and television newscasts. Tables provide a way to organize numerical data. Bar graphs and line graphs provide a visual display (a picture) of numerical data. The use of tables and graphs makes it easier to compare data as you will see in the examples that follow.

Example 1: Use the bar graph to answer the questions below.

![Mean Salaries Chart]

a. What is the mean salary for females in Company B?

The middle bar in the second group represents females in Company B. The height of the bar corresponds with 50,000 shown on the left of the graph.

Answer: $50,000

b. If you had the choice to be hired by one of these companies, which one would you work for and why?

The height of the bar represents the mean salary. The highest bar in the male group is the first, Company A. The highest bar in the female group is the middle one, Company B.

Answer: Male – Company A because it has the highest male salary
Female – Company B because it has the highest female salary

c. What is the difference between the female mean salary in Company B and the male mean salary in Company C?

The female salaries are the second group. The middle bar in that group is for Company B and its height corresponds to a salary of $50,000. Male salaries are the first group. The last bar in that group is for Company C and its height corresponds to a salary of $30,000. We subtract to obtain the difference.

Answer: $50,000 – $30,000 = $20,000
Practice 1: Use the bar graph to answer the questions below.

![Bar Graph]

a. What is the mean salary for females in Company C?

b. If you had the choice to be hired by one of these companies, which one would you work for and why?

c. What is the difference in female mean salary between Companies B and C?

Answers:

a. $40,000.  
b. I would choose company A because it pays the most.  
c. $5000.

Watch it: [http://youtu.be/2Uv70ZsIxDk](http://youtu.be/2Uv70ZsIxDk)

Example 2: Use the line graph to answer the questions below.

![Line Graph]

a. Which month had the lowest number of iPod sales?
The height of the marker on the line graph indicates the number of iPods sold. The lowest marker corresponds with the least number of sales.
Answer: February

b. How many iPods were sold in the month of April?
The height of the last marker represents this number.
Answer: 60

c. Did the number of iPods sold increase, decrease, or remain the same?
A line slanting down shows a decrease. A line slanting up shows an increase.
Answer: Decreased from January to February  
Increased from February to April
Practice 2: Use the line graph to answer the questions below.

![Ipod Sales](image)

- a. Which month had the highest number of iPods sold?
- b. How many iPods were sold in the month of September?
- c. Over this four month period, is the number of iPods sold increasing, decreasing or remaining the same?

**Answers:**
- a. December, b. approximately 50 iPods, c. increasing


Example 3: Use the bar graph to answer the questions below.

![Monthly Snowfall](image)

- a. What was the snowfall in March?
  The third bar is for March. The height of the bar corresponds to the inches of snowfall shown on the left of the graph.
  Answer: 10 inches

- b. What month had a snowfall more than 5 inches but less than 10 inches?
  There is only one bar whose height is between the 5 and 10 inch lines.
  Answer: November
Practice 3: Use the bar graph to answer the questions below.

![Monthly Snowfall Graph]

a. What was the snowfall in November?
b. Which month(s) had a snowfall that was less than 15 inches but greater than 5 inches?

Answers: a. 5 inches  b. March

Watch it: [http://youtu.be/AktLjGFNkn4](http://youtu.be/AktLjGFNkn4)

Example 4: Below are the rushing statistics for the 2010 Baltimore Ravens (baltimoreravens.com)

<table>
<thead>
<tr>
<th>Player</th>
<th>Attempts</th>
<th>Yards</th>
<th>Yards per Attempt</th>
<th>Longest Rush</th>
<th>Rushing Touchdowns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ray Rice</td>
<td>307</td>
<td>1,220</td>
<td>4.0</td>
<td>50</td>
<td>5</td>
</tr>
<tr>
<td>Willis McGahee</td>
<td>100</td>
<td>380</td>
<td>3.8</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Joe Flacco</td>
<td>43</td>
<td>84</td>
<td>2.0</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Le’Ron McClain</td>
<td>28</td>
<td>85</td>
<td>3.0</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Donte’ Stallworth</td>
<td>5</td>
<td>45</td>
<td>9.0</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Anquan Boldin</td>
<td>2</td>
<td>2</td>
<td>1.0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Sam Koch</td>
<td>1</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>David Reed</td>
<td>1</td>
<td>15</td>
<td>15.0</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

da. Which player had the highest yards per attempt?
   The highest yards per attempt is 15, as shown in column 4. The corresponding player is named in the first column.
   Answer: David Reed

b. How many rushing touchdowns did Joe Flacco have?
   Find Flacco’s name in the first column and follow it across to the last column.
   Answer: 1

c. Which players had a longest rush of less than 10 yards?
   Column 5 shows one that is 3 yards and another that is 0 yards. The corresponding players are named in the first column.
   Answer: Anquan Boldin and Sam Koch
**Practice 4:** Below are the statistics for the 2012 Baltimore Orioles *(Baltimore.orioles.mlb.com)*

<table>
<thead>
<tr>
<th>Player</th>
<th>At Bat</th>
<th>Hits</th>
<th>Single</th>
<th>Double</th>
<th>Triple</th>
<th>Homerun</th>
<th>Batting Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reimold, N</td>
<td>67</td>
<td>21</td>
<td>10</td>
<td>6</td>
<td>0</td>
<td>5</td>
<td>0.313</td>
</tr>
<tr>
<td>Markakis, N</td>
<td>420</td>
<td>125</td>
<td>81</td>
<td>28</td>
<td>3</td>
<td>13</td>
<td>0.298</td>
</tr>
<tr>
<td>Jones, A</td>
<td>648</td>
<td>186</td>
<td>112</td>
<td>39</td>
<td>3</td>
<td>32</td>
<td>0.287</td>
</tr>
<tr>
<td>Davis, C</td>
<td>515</td>
<td>139</td>
<td>86</td>
<td>20</td>
<td>0</td>
<td>33</td>
<td>0.27</td>
</tr>
<tr>
<td>McLouth, N</td>
<td>209</td>
<td>56</td>
<td>36</td>
<td>12</td>
<td>1</td>
<td>7</td>
<td>0.268</td>
</tr>
<tr>
<td>Machado, M</td>
<td>191</td>
<td>50</td>
<td>32</td>
<td>8</td>
<td>3</td>
<td>7</td>
<td>0.262</td>
</tr>
<tr>
<td>Betemit, W</td>
<td>341</td>
<td>89</td>
<td>58</td>
<td>19</td>
<td>0</td>
<td>12</td>
<td>0.261</td>
</tr>
<tr>
<td>Thome, J</td>
<td>101</td>
<td>26</td>
<td>18</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>0.257</td>
</tr>
<tr>
<td>Paulino, R</td>
<td>63</td>
<td>16</td>
<td>13</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0.254</td>
</tr>
<tr>
<td>Pearce, S</td>
<td>71</td>
<td>18</td>
<td>11</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>0.254</td>
</tr>
</tbody>
</table>

a. Which player had the most at bats?
b. How many hits did Adam Jones have?
c. Which players had the most homeruns?

**Answers:**

a. Jones, A.  
b. 186  
c. Davis, C.

**Watch it:** [http://youtu.be/twyhaggkas](http://youtu.be/twyhaggkas)

**Watch All:** [http://youtu.be/TPo7lXNEvZo](http://youtu.be/TPo7lXNEvZo)
2.4 Bar Graphs, Line Graphs, and Tables Exercises

1. What is the approximate number of people whose height is 63 inches?

2. Which age group has the greatest number of DUI’s for Slate County?
3. What year had the lowest number of graduates?

4. What year had the lowest number of dropouts?

5. How many tickets were sold in the third week?
6. In what group did the scores of the men and women differ most?

7. In what year was the number of graduates the same as the number of dropouts?

8. How many people weigh 142 pounds?

9. Compare the number of people who weigh more than 142 pounds with the number of people who weigh less than 142 pounds. Which is greater?

<table>
<thead>
<tr>
<th>Weight</th>
<th>Number of women</th>
</tr>
</thead>
<tbody>
<tr>
<td>127</td>
<td>6</td>
</tr>
<tr>
<td>132</td>
<td>3</td>
</tr>
<tr>
<td>137</td>
<td>11</td>
</tr>
<tr>
<td>142</td>
<td>15</td>
</tr>
<tr>
<td>147</td>
<td>7</td>
</tr>
</tbody>
</table>

Distribution of Women’s Weights
10. Which search engine has the most users?

<table>
<thead>
<tr>
<th>Choice</th>
<th>Number of people (in millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>20</td>
</tr>
<tr>
<td>Bing</td>
<td>6</td>
</tr>
<tr>
<td>Yahoo</td>
<td>2</td>
</tr>
</tbody>
</table>

11. Which search engine has the fewest users?

12. Which departments have more female faculty than male faculty?

<table>
<thead>
<tr>
<th>Department</th>
<th>Number of faculty members</th>
<th>Number of female faculty</th>
<th>Number of male faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>45</td>
<td>25</td>
<td>20</td>
</tr>
<tr>
<td>Mathematics</td>
<td>43</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>History</td>
<td>17</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Psychology</td>
<td>21</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Health</td>
<td>16</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

13. Are the sales of Widgets at Company X increasing or decreasing over time?

![Annual Sales Graph]
14. What was the value of Sarah’s car in 2004?

15. Is the value of Sarah’s car increasing or decreasing over time?

16. What was the temperature on Day 5 in New York City?

17. What was Sam’s weight in the month of March?

18. How much weight did Sam gain from February to April?
19. How much did the value of Sarah’s car depreciate from 2005 to 2006?

20. What is the store’s busiest time?

21. How many cell phones do Smalltown 18-year olds have?
2.4 Bar Graphs, Line Graphs, and Tables Exercise Answers

1. 11 people *(approximately)*

2. 16 – 20

3. 2000

4. 2006

5. 30

6. G4

7. 2006

8. 15

9. Less than 142 pounds

10. Google

11. Yahoo

12. English, Psychology, and Health

13. Increasing

14. $17,500

15. Decreasing

16. 59°F

17. 61 kg

18. 15 kg

19. $4500

20. 1 p.m.

21. 530