

Frequency Distribution

A **frequency distribution** is a summary technique that organizes data into classes and provides in tabular form a list of the classes along with the number of observations in each class.

DEFINITION

Constructing a Frequency Distribution

1. Choose the classifications.
2. Count the number in each class.

PROCEDURE

Table 3.1.1 - Population

Geographic Area	Populat
	April 1, 2010
Alabama	4,780,131
Alaska	710,249
Arizona	6,392,301
Arkansas	2,916,025
California	37,254,522
Colorado	5,029,324

Table 3.1.2 - Frequency Distribution of Population Change in States

% Change in Population	Frequency
Below 0	2
0 to 1.9	15
2 to 3.9	6
4 to 5.9	11
6 to 7.9	7
8 to 9.9	4
10 to 11.9	3
12 +	2

Pink	red	Black
gray	rod	Blue
Black	Black	Blue
White	White	White
Blue	Green	Grey
White	Gray	
Black	Green	
Grey	Pink	
Green	Green	

Pink	2
Gray	4
Black	4
White	4
Blue	3
Green	4
rod	2

In general, how would you rate the quality of American public schools?

Excellent	462
Pretty good	288
Only fair	225
Poor	225
Not sure	50

How serious is a lack of parental involvement with a child's education?

Very serious	700
Somewhat serious	325
Not very serious	112
Not a problem	75
Not sure	38

In general, how would you rate the quality of American public schools?

Excellent	37%
Pretty good	23%
Only fair	18%
Poor	18%
Not sure	4%

How serious is a lack of parental involvement with a child's education?

Very serious	56%
Somewhat serious	26%
Not very serious	9%
Not a problem	6%
Not sure	3%

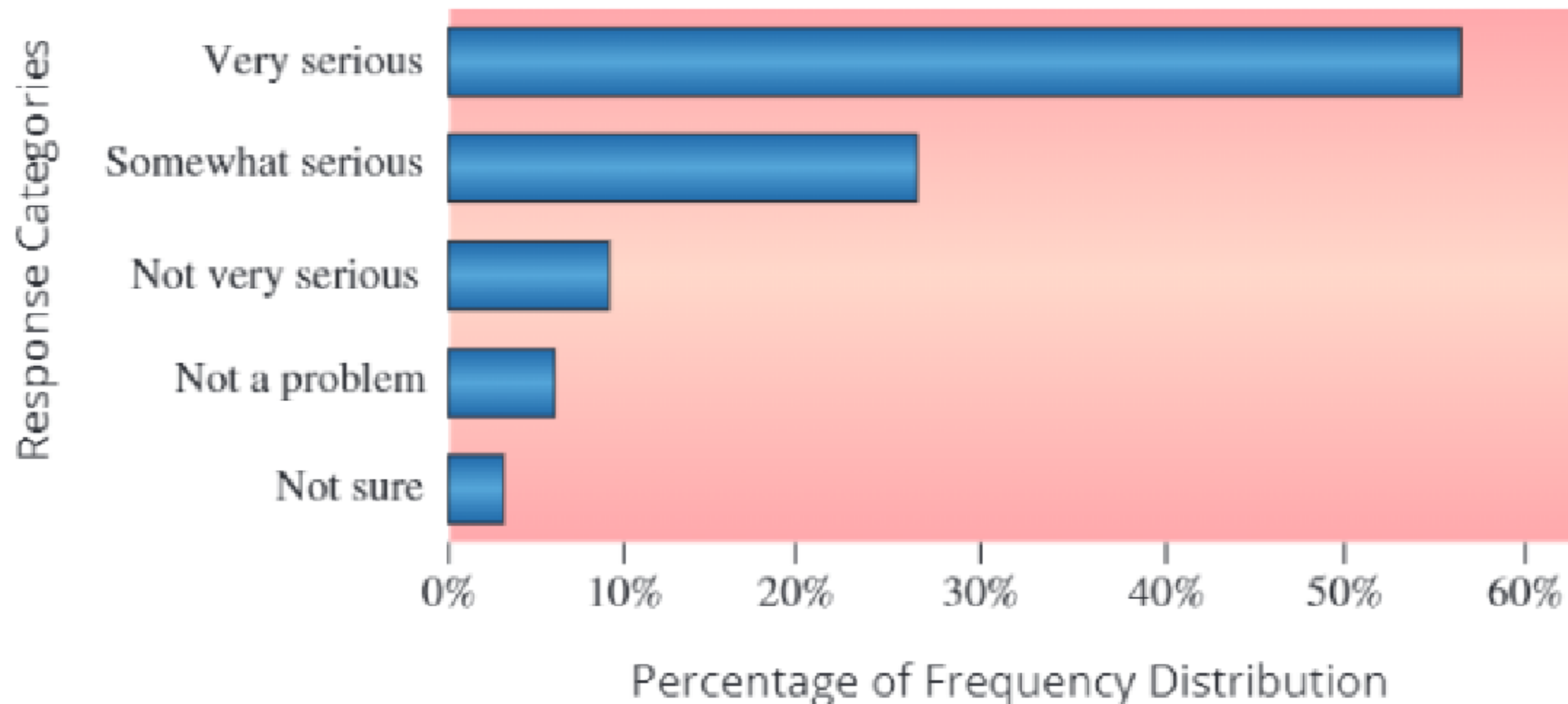
Signs of Parkinsonism

Sign	Frequency	
Reduced arm swing	210	45 ^o /o
Prolonged turning	153	33 ^o /o
Right leg rigidity	141	30 ^o /o
Left leg rigidity	154	33 ^o /o
Slow finger taps	197	42 ^o /o
Shuffling gait	83	18 ^o /o

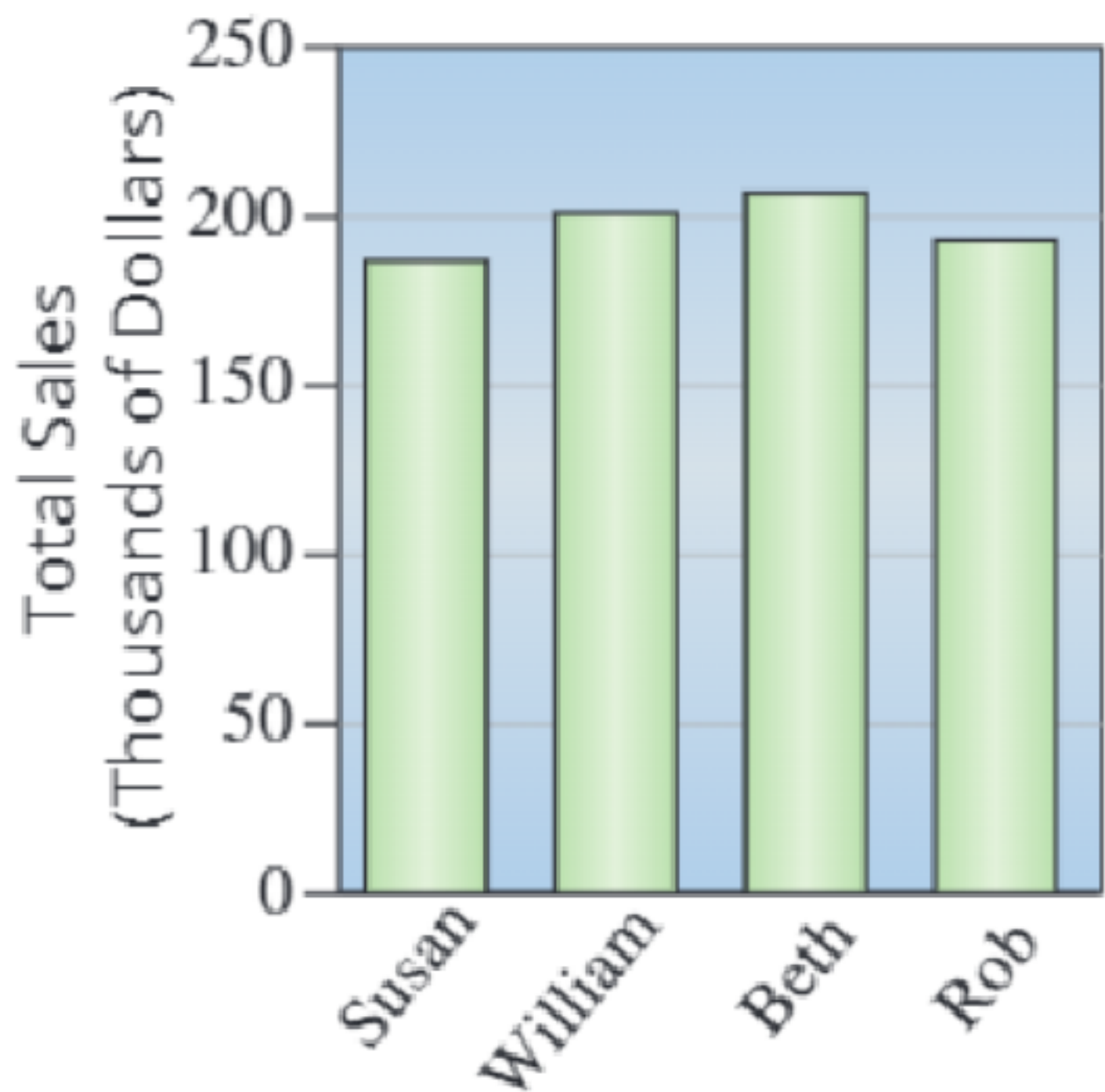
Bar Chart

The **bar chart** is a simple graphical display in which the length of each bar corresponds to the number of observations in a category.

Lack of Parental Involvement Louis Harris Poll



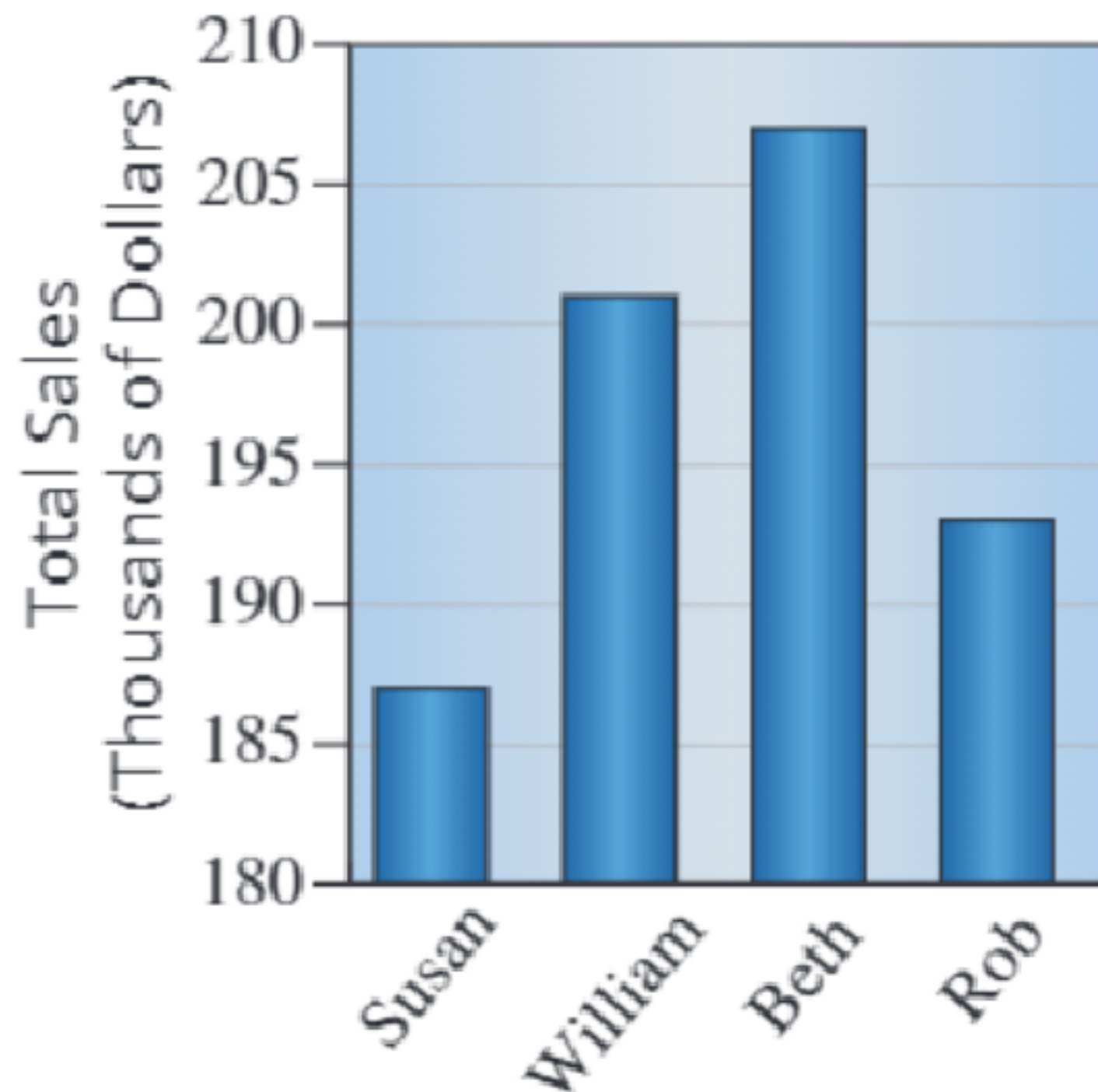
Sales Performance



Salesperson

Figure 3.2.2

Sales Performance



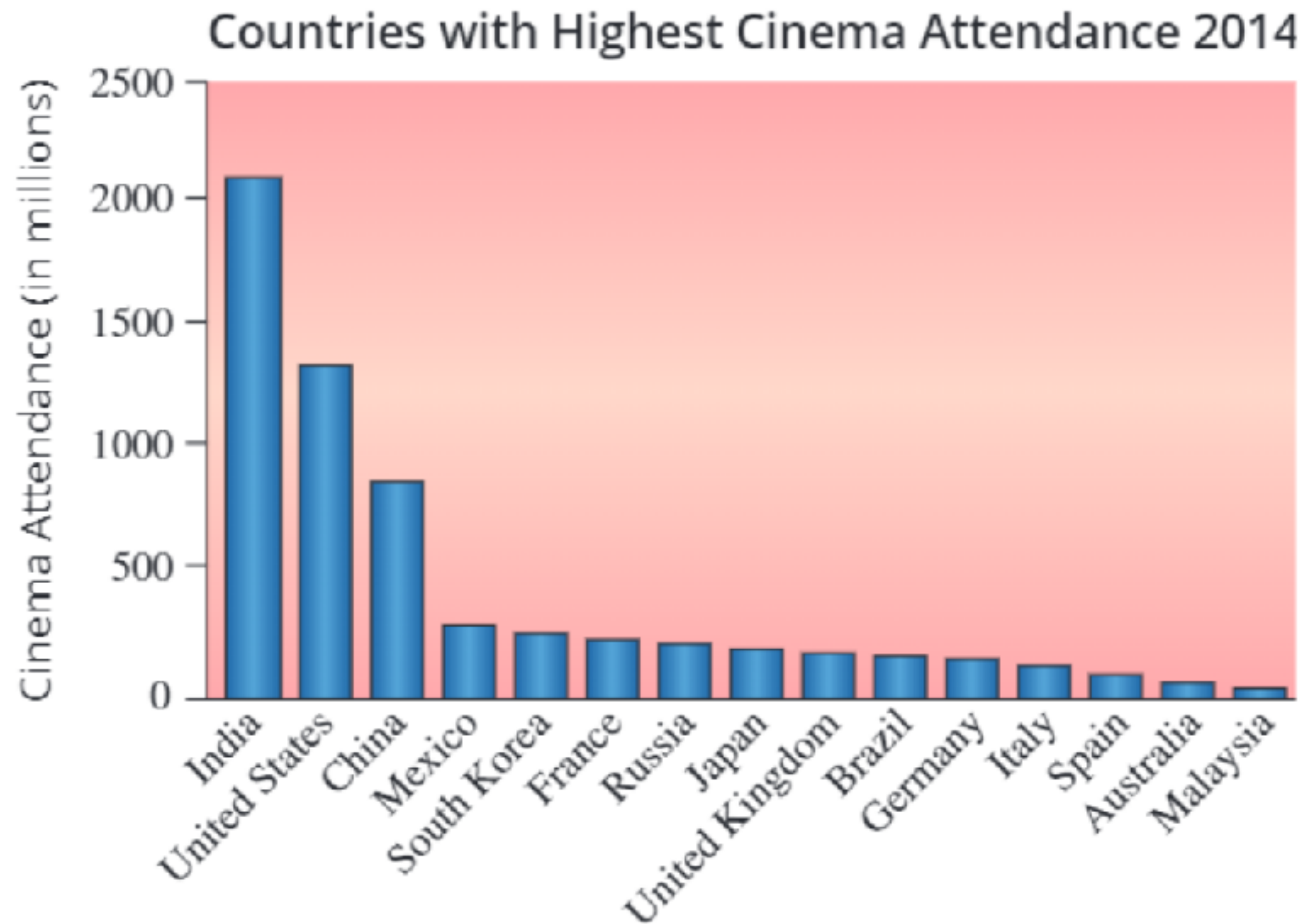
Salesperson

Figure 3.2.3

Pareto Chart

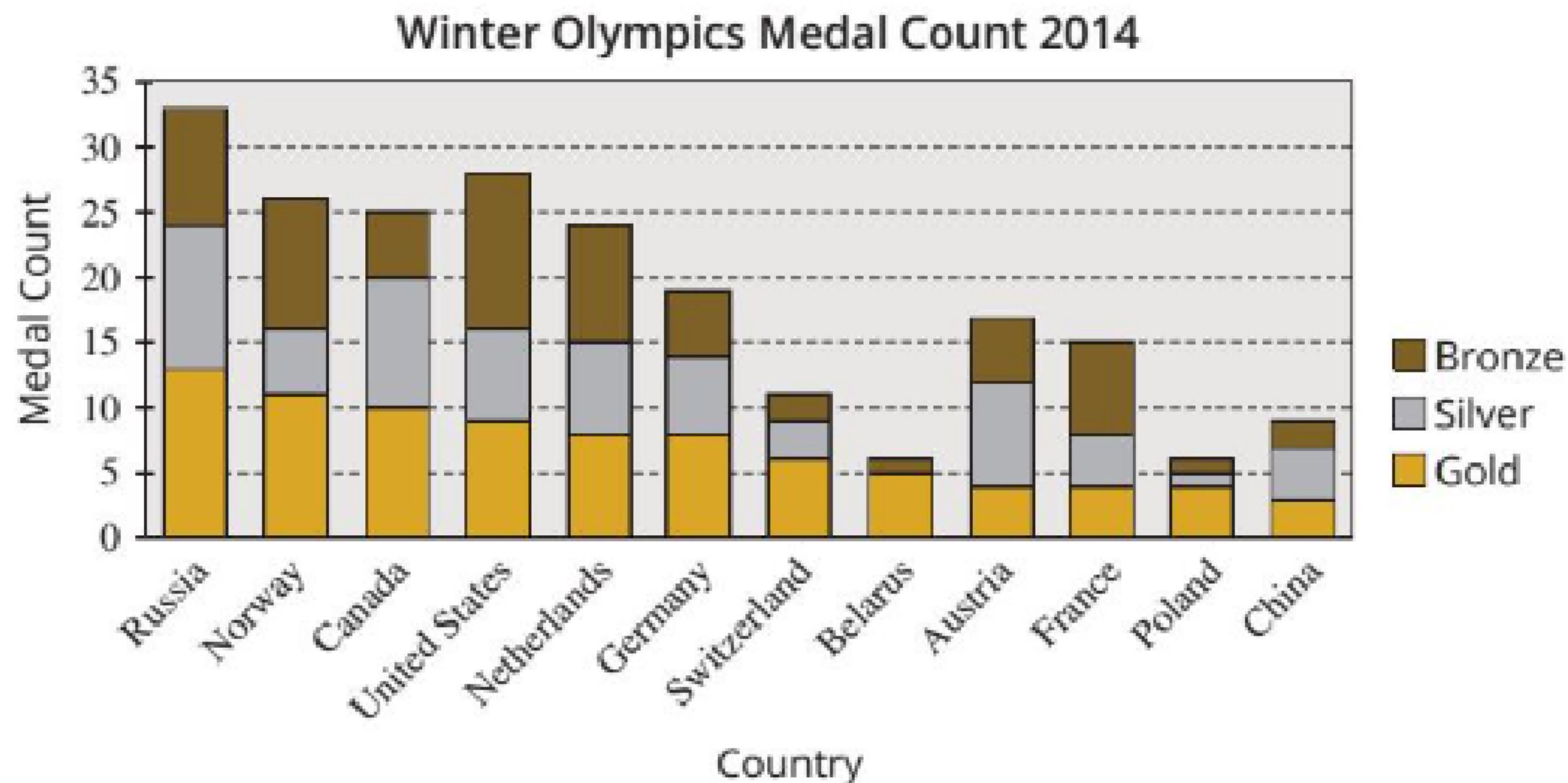
The **Pareto chart** is a bar graph whose bars are arranged in decreasing order of frequency.

DEFINITION



Stacked Bar Charts

Stacked bar charts are an interesting variation on the standard bar chart. The number of medals (gold, silver, and bronze) won during the 2014 Winter Olympics for selected countries is given in Figure 3.2.7.



Winter Olympics Medal Count 2014

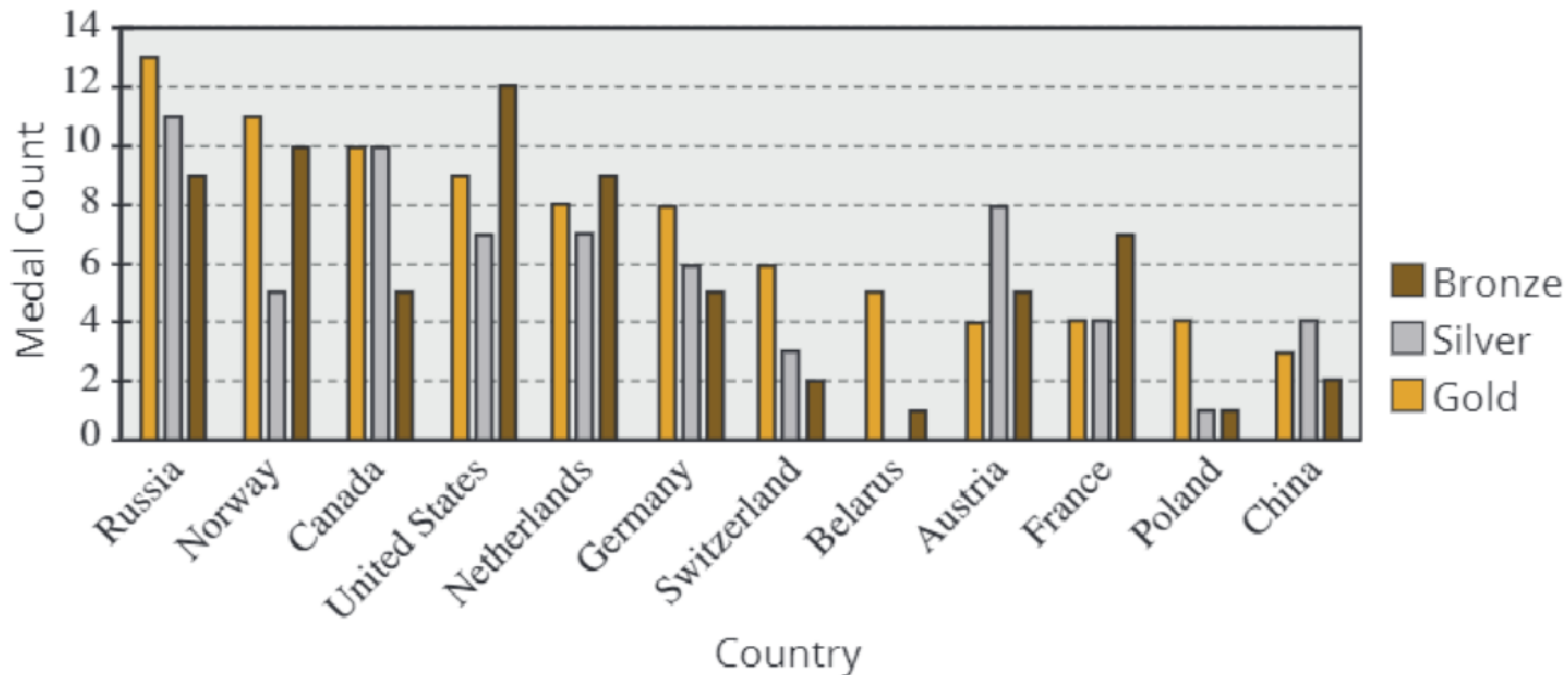


Figure 3.2.8

Pie Chart

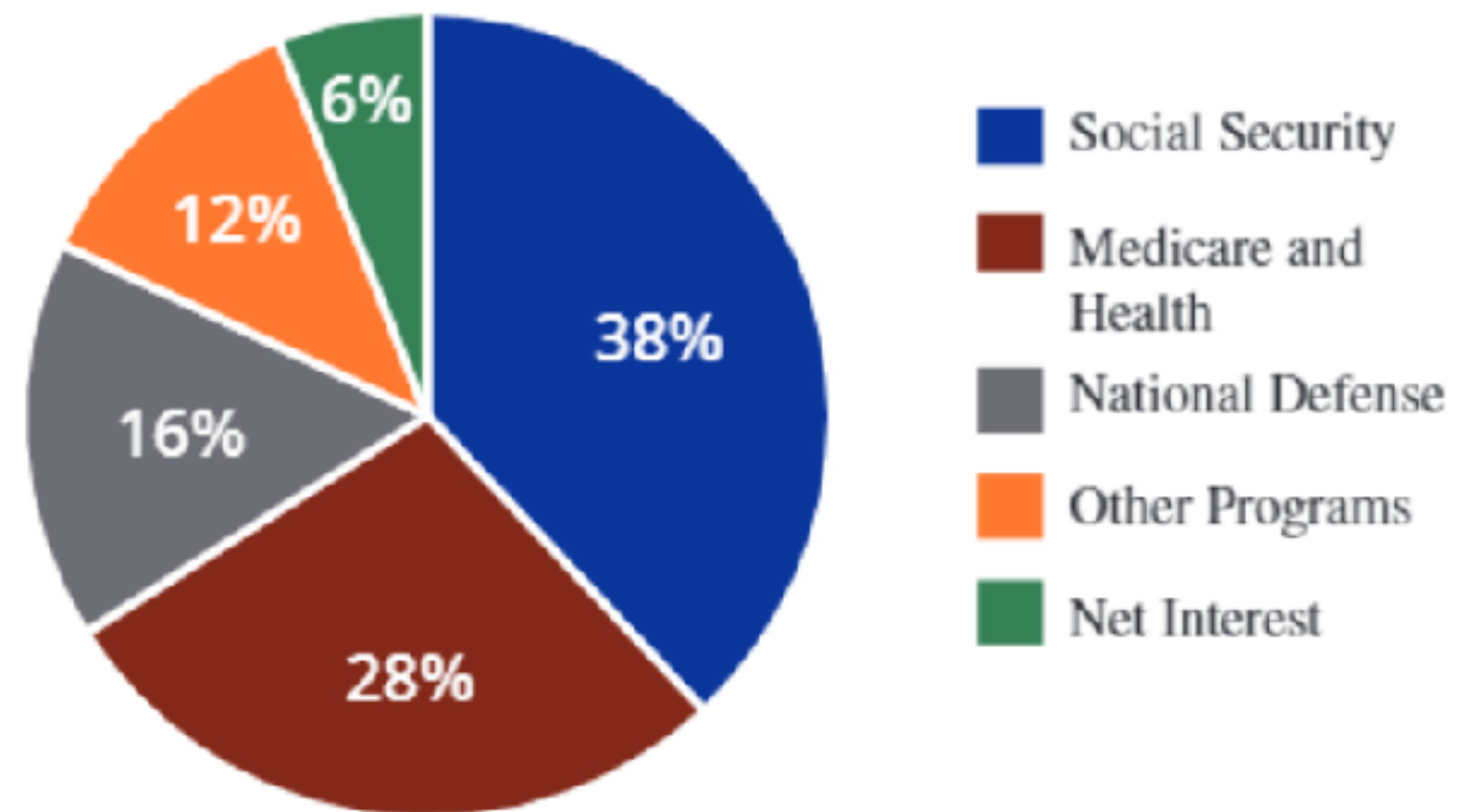
A **pie chart** (or **circle graph**) is a graph used to display categorical data as slices of a circle. The size of each slice is proportional to the amount or frequency in each category. The proportion of the total that each slice represents is often displayed as a percentage on the chart. These percentages should total 100%.

DEFINITION

Table 3.2.2 - Percentage Spent by the Federal Government in 2015

Category	Percentage Spent
Social Security	38%
Medicare and Health	28%
National Defense	16%
Other Programs	12%
Net Interest	6%

Total Spending: \$3.36 trillion



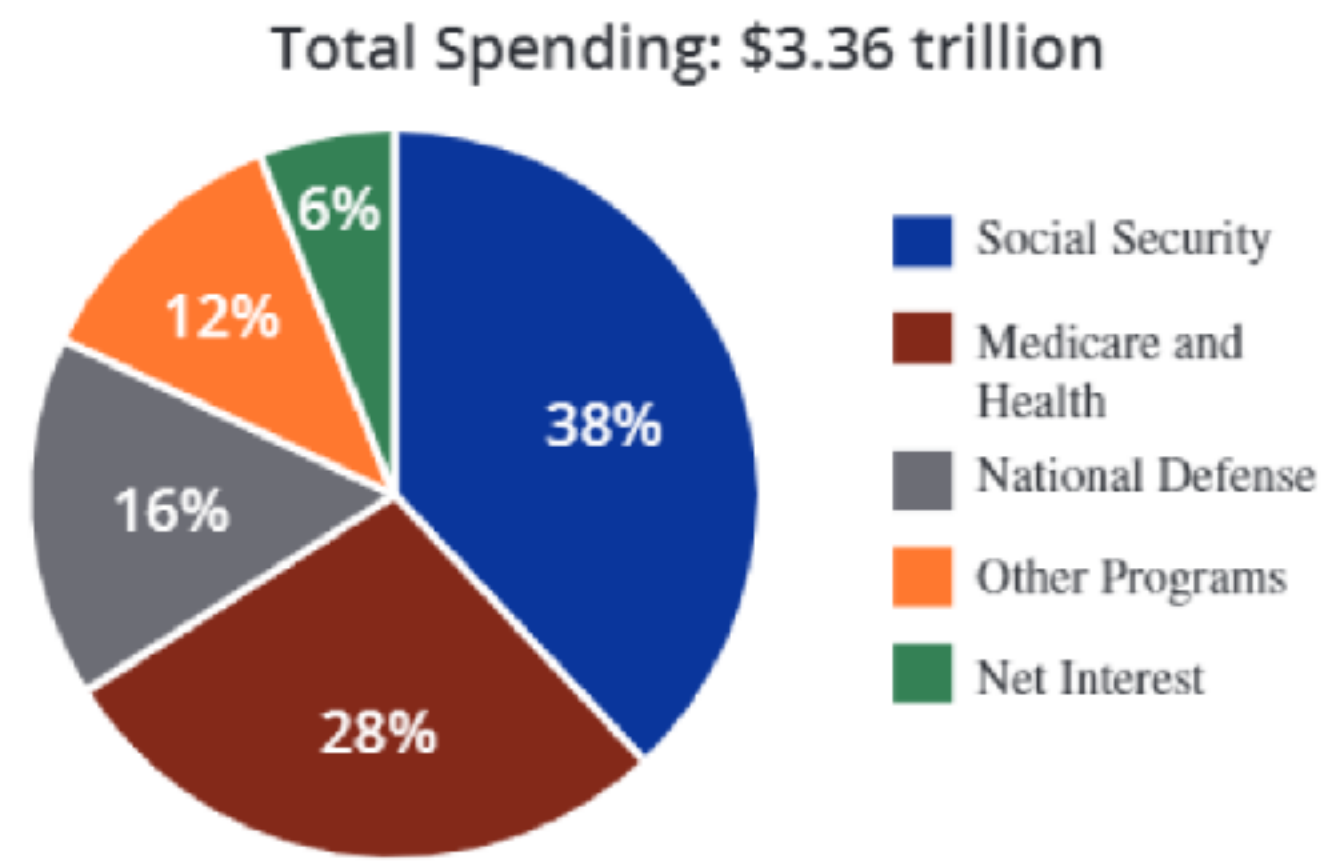
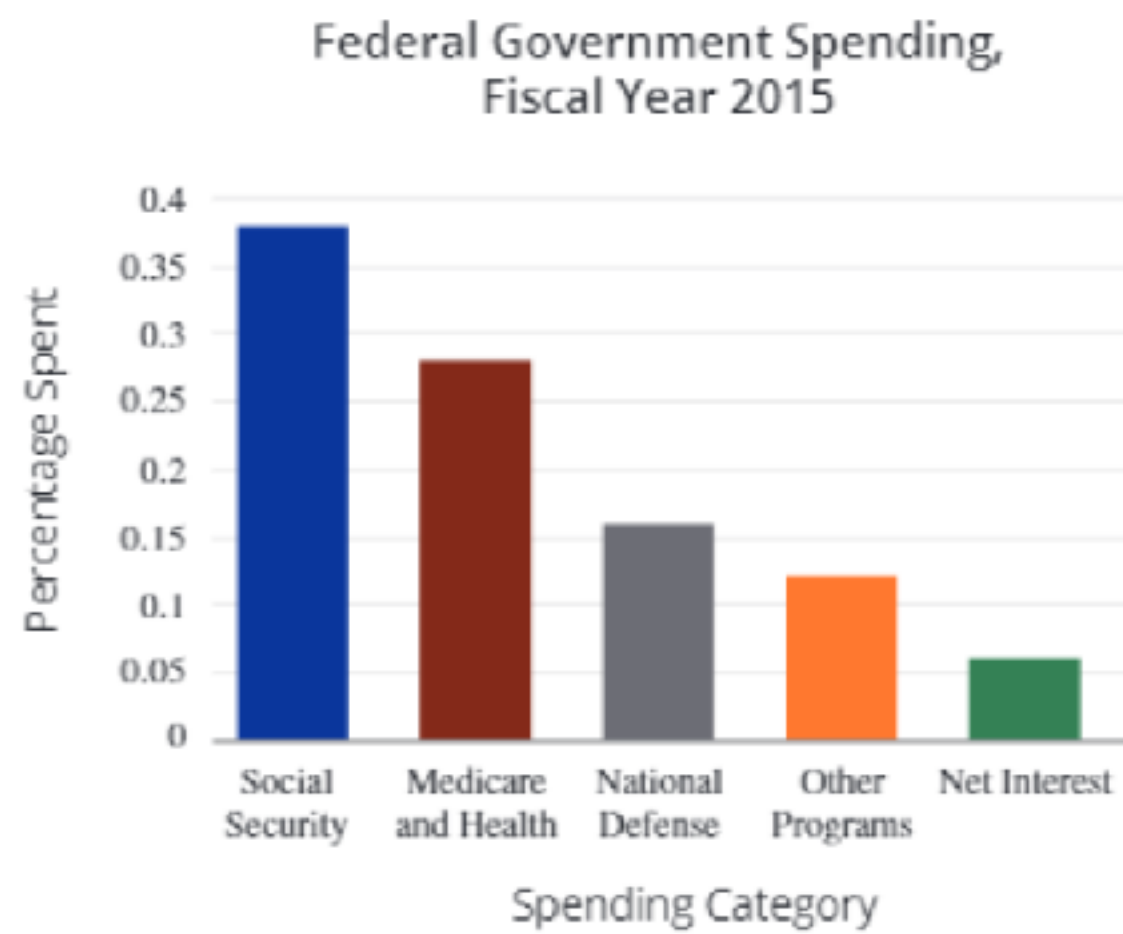
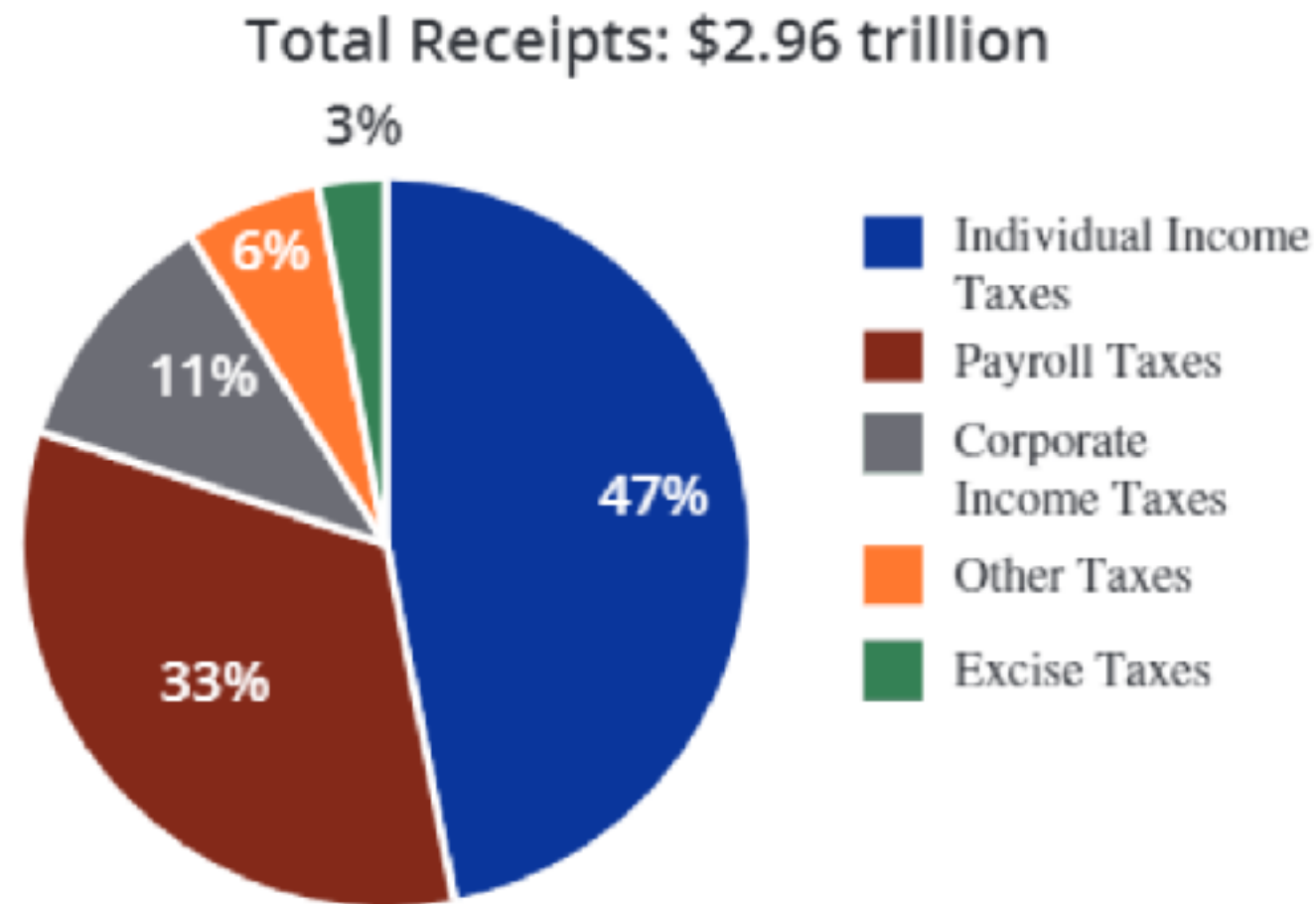
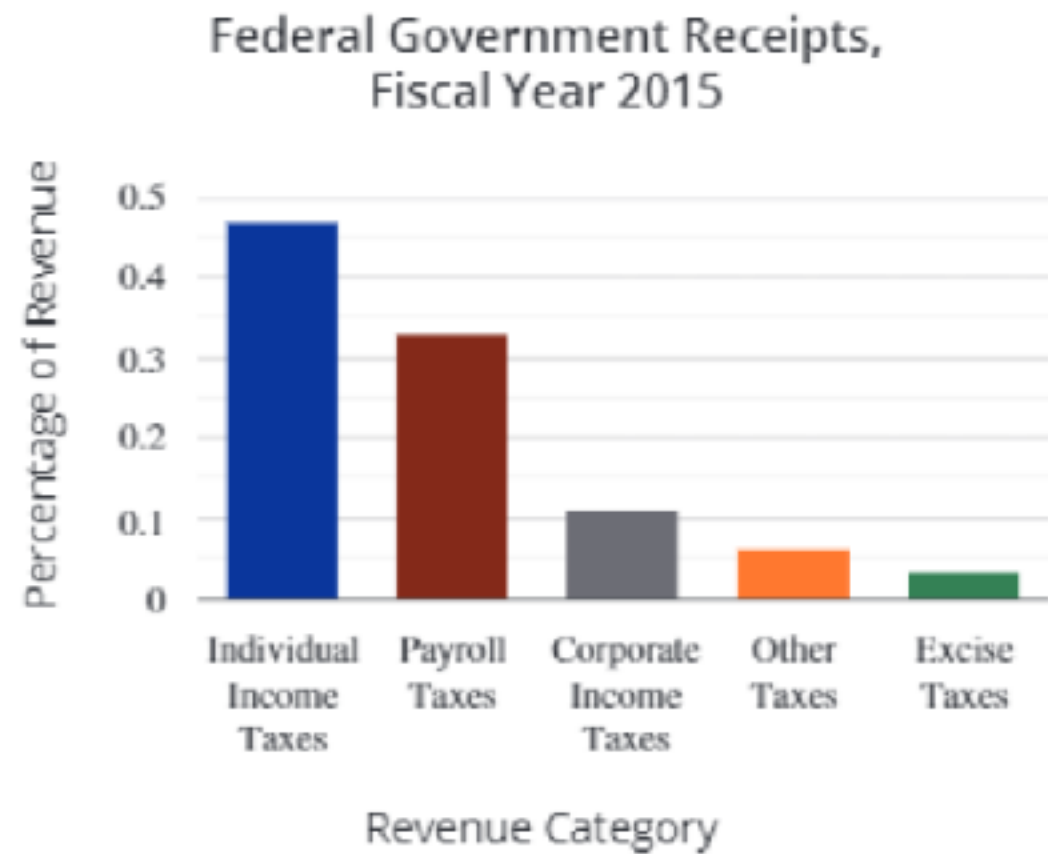


Figure 3.2.9



Percentage of Sales
(5 Employees)

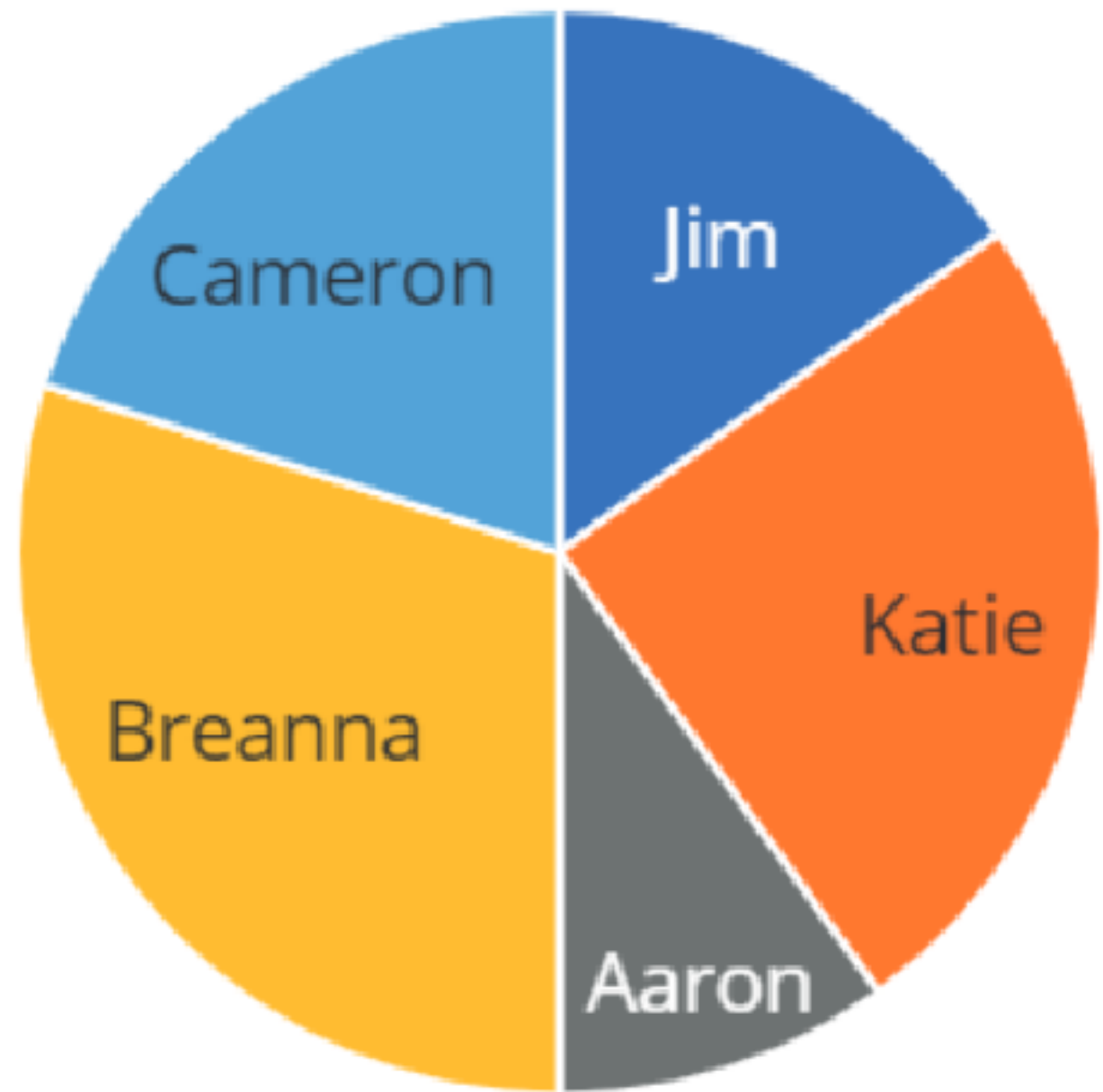


Figure 3.2.11

Percentage of Sales
(40 Employees)

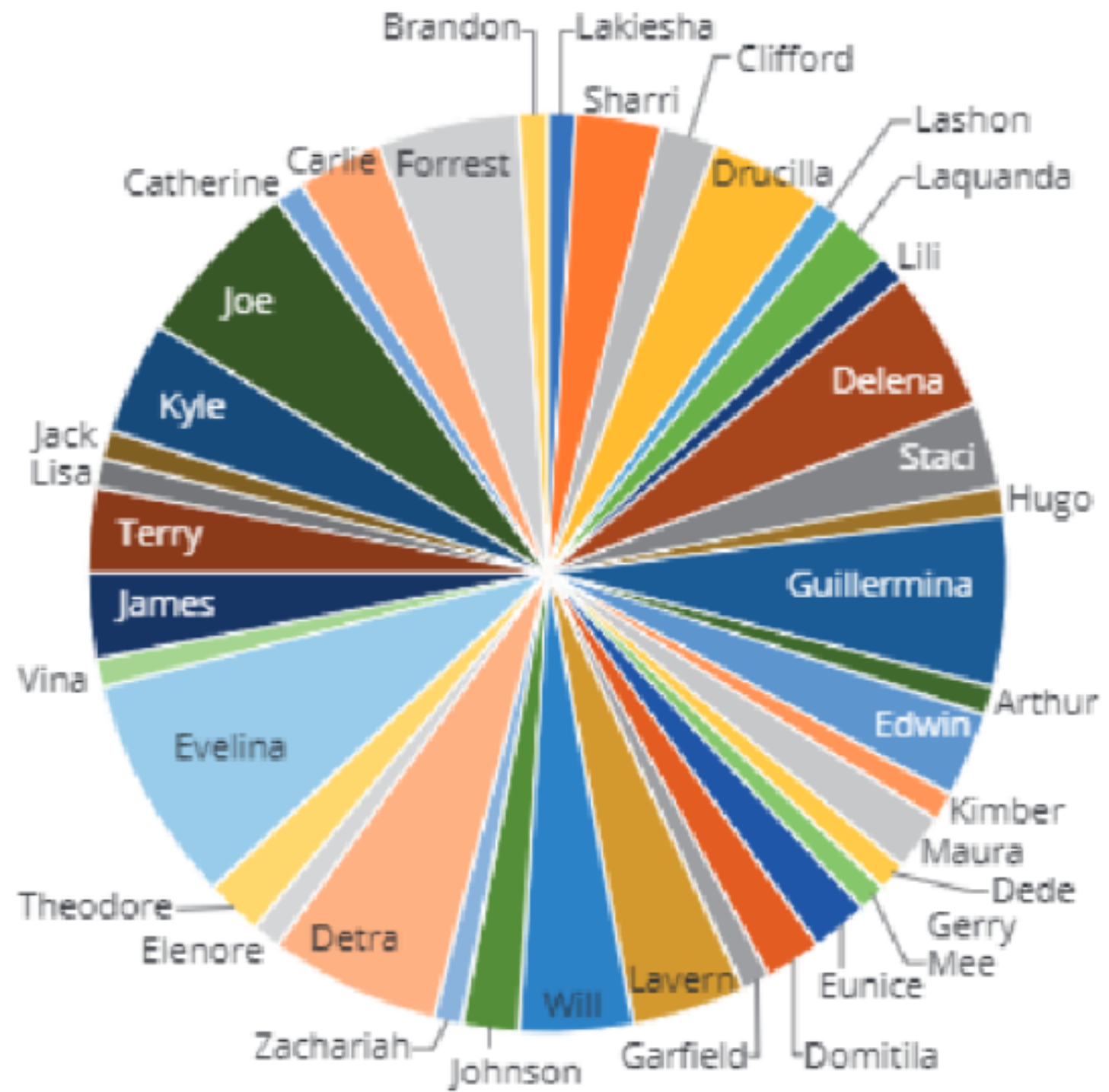


Figure 3.2.12

Healthcare Costs Around the World per Capita, 2014

Country	Expenditure per Capita (\$)
Australia	6031
Canada	5292
Denmark	6463
Finland	4612
France	4959
Germany	5411
Iceland	4662
Ireland	4239
Japan	3703
Sweden	6808
Switzerland	9674
United Kingdom	3935
United States	9403

Occupation Growth Rates

Occupation	Projected Increase 2016–2026
Solar photovoltaic installers	105%
Wind turbine service technicians	96%
Home health aides	47%
Personal care aides	37%
Physician assistants	37%
Nurse practitioners	36%
Statisticians	33%
Physical therapist assistants	31%