

Microsoft Excel 2010

Lesson 15: Practice Exercise 5

Other than the fact that it is long, this lesson is a good example of the kind of questions you will see on the practical exam. It is mainly review, although a couple of new things are introduced in the course of the lesson.

Answers to the questions in this lesson are at the end of the document

Start with **Income_1** spreadsheet, which contains two worksheets – Personal Income and Population. The data in these worksheets, which comes from a government web site, is for the states from 1960 through 2010. Note that personal income is expressed in thousands of dollars.

A. Income_1: Personal Income Worksheet

1. Sort the **Personal Income** worksheet so that states are grouped by region.
2. Change the display so that the numbers are displayed as money: \$26,949,598
3. Set the worksheet up to display the total personal income for each region for the years 1960 through 1965.
 - a. What was the total personal income for the Midwest in 1962?
 - b. What was the total personal income for the Northeast in 1964?
4. Change the worksheet so that it displays the average personal income for the regions, rather than the sum.
 - a. What was the average personal income for the West in 1965?
 - b. What was the average personal income for the South in 1960?
5. Hide the details in the worksheet so only the averages for the regions are displayed.
 - a. What region consistently had the lowest average personal income from 1960 through 1965?
 - b. What region consistently had the highest average personal income from 1960 through 1965?
6. For each region, calculate the percent increase in average personal income from 1960 to 1965.
 - a. $\% \text{ increase} = (1965\text{average} - 1960\text{average}) / 1960\text{average}$
 - b. What is the percent increase for each region, expressed with two decimal places?
 - c. Which region had the greatest percent increase during this period?

B. Income_1: Population Worksheet

1. Move to the **Population** worksheet. Set it up so that rows 1 through 4 and column A are stationary. They will not move as you scroll through the worksheet so that the years and states are easy to see.
2. Display the data in different ways to make it easy to answer the questions below.
 - a. What states had the lowest and highest populations, respectively, in 1960?
 - b. What states had the lowest and highest populations, respectively, in 2010?
 - c. Display the data for only the states with populations above ten million in 1960. What are these states?
 - d. Display the data for only the states with populations above ten million in 2010. What are these states?
3. Calculate the percent increase in population for each state from 1960 to 2010.
 - a. $\% \text{ increase} = (2010\text{population} - 1960\text{population}) / 1960\text{population}$
 - b. What state had the highest percent increase in population during this period? What is the value of this increase?
 - c. Did any state or district lose population? If so, by what percent?
4. Save the Income_1 spreadsheet. The next part of this lesson will use another.

Now load the **Income_2** spreadsheet, which is identical to the initial Income_1 spreadsheet.

C. Income_2

1. In the **Personal Income** worksheet, change the display so that the numbers are displayed as money: \$26,949,598
2. In both worksheets, fill the heading cells in row 4 with yellow
3. In both worksheets, widen the columns so that all numbers are displayed
4. Create a new worksheet named **Per Capita**

- a. Use copy and paste to set up the Per Capita worksheet to look like the other two.
- b. Note that the headings are in the center of their cells.

	A	B	C	D	E
1	Per Capita				
2					
3					
4	State	Region	1960	1961	1962
5	Alabama	South			
6	Alaska	West			
7	Arizona	West			
8	Arkansas	South			
9	California	West			
10	Colorado	West			
11	Connecticut	Northeast			

- c. Set the **Zoom** (lower right corner of the worksheet) to 80% to make more of the worksheet visible.



- d. Set the worksheet up so that rows 1 through 4 and column A are stationary. They will not move as you scroll through the worksheet so that the years and states are easy to see.
 - e. We are going to concentrate on the year 2010. Hide the columns corresponding to the years 1960 – 2009, so that they are not displayed.
5. Calculate the per capita income for each state in 2010. The per capita income is the total personal income divided by the population. Remember that the total personal income worksheet is expressed in thousands of dollars.
 - a. What was the per capita income in Alabama in 2010?
 - b. What was the per capita income in Wyoming in 2010?
 6. What was the average per capita income for the states in 2010?

7. Display the per capita incomes in 2010 so that values less than the average automatically are highlighted in red.

	A	B	BA
1	Per Capita		
2			
3			
4	State	Region	2010
5	Alabama	South	\$ 33,945
6	Alaska	West	\$ 44,174
7	Arizona	West	\$ 34,999
8	Arkansas	South	\$ 33,150
9	California	West	\$ 43,104
10	Colorado	West	\$ 42,802
11	Connecticut	Northeast	\$ 56,001
12	Delaware	South	\$ 39,962
13	District of Columbia	Northeast	\$ 71,044

8. Set up the block of cells BC2 through BE3 to do the following:
 - a. Each cell has a thin border. The entire block has a thick border. The cells are colored gray. The text is in 10 pt bold Arial font.
 - b. You may enter the name of any state in cell BD2.
 - c. When you enter a state in BD2, the 2010 per capita income for that state will automatically appear in cell BD3.
 - i. It is helpful to know that 51 years of data are included in the worksheet
 - d. If the 2010 per capita income is larger than the average 2010 per capita income, the word “Larger” will be displayed in cell BE3.
 - e. If the 2010 per capita income is smaller than the average 2010 per capita income, the word “Smaller” will be displayed in cell BE3.

f. Two examples are shown below.

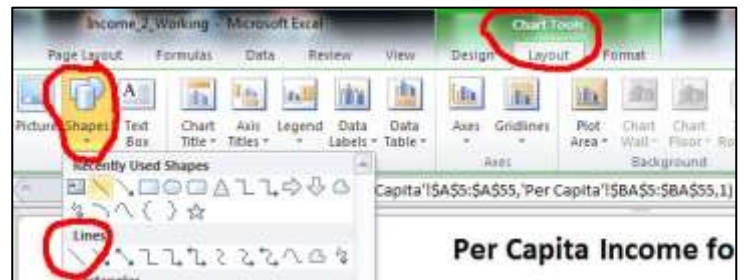
BC	BD	BE
State	Illinois	
Per capita income	\$ 43,159	Larger

BC	BD	BE
State	Indiana	
Per capita income	\$ 34,943	Smaller

9. Create a chart on a separate sheet that looks like the *one shown on the next page*.

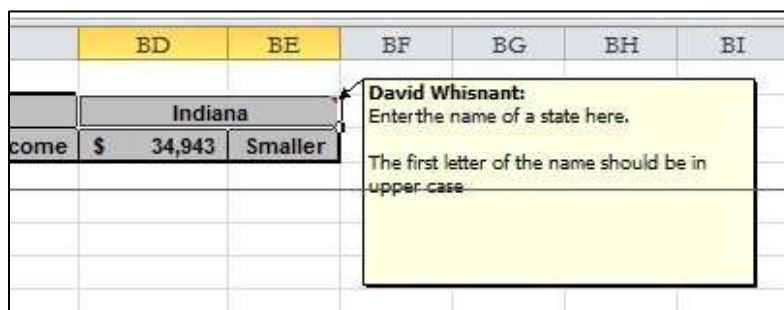
10. Name the sheet “Per Capita Chart.”

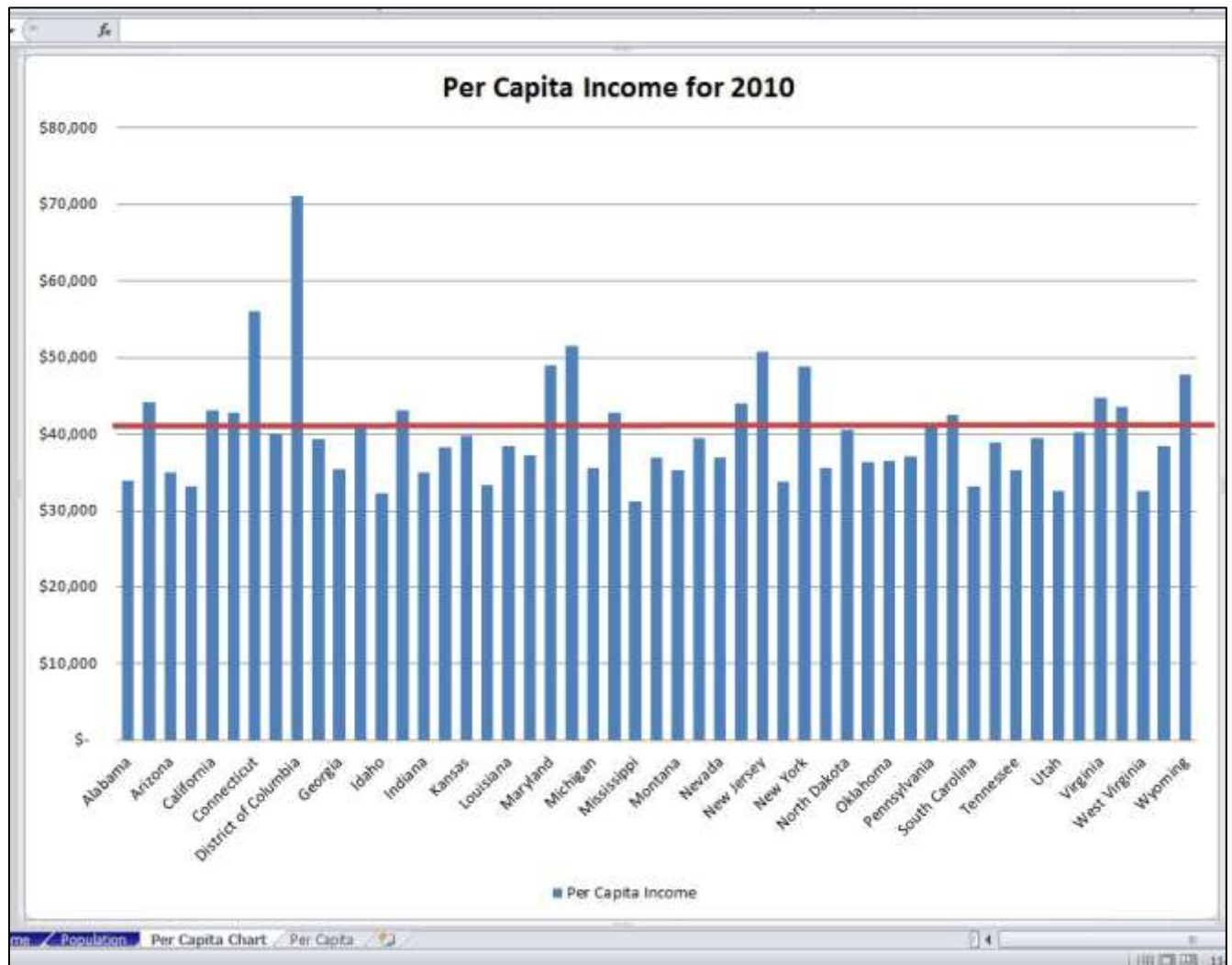
11. Add a red line shape to the chart in the approximate position of the average per capita income for 2010 (\$40,115).



12. Increase the weight of the Shape Outline to 3 pt so that the line is thicker.

13. Set up the Per Capita worksheet so that if you bring the cursor over cells BD2 or BE2, you will see the following:





Answers

3a: \$132,342,795,000 (expressed in dollars rather than thousands of dollars)

3b: \$144,447,367,000

4a: \$7,781,268,000

4b: \$6,043,164,000

5a. The West

5b: The Northeast

6b: Midwest 33.17%

Northeast 31.02%

South 39.21%

West 39.07%

6c: The South

8a: In 1960, Alaska had the lowest population and New York had the highest

8b: In 2005, Wyoming had the lowest population and California had the highest.

8c: In 1960, four states had populations above ten million: PA, IL, NY, and CA

8d: In 2010, seven states had populations above ten million: OH, PA, IL, FL, NY, TX, and CA

9b: Nevada had the highest percent increase in population, 828%

9c: The District of Columbia lost population, -21%

15a: \$33,945

15b: \$47,851

16: \$40,115