Statistical Reasoning
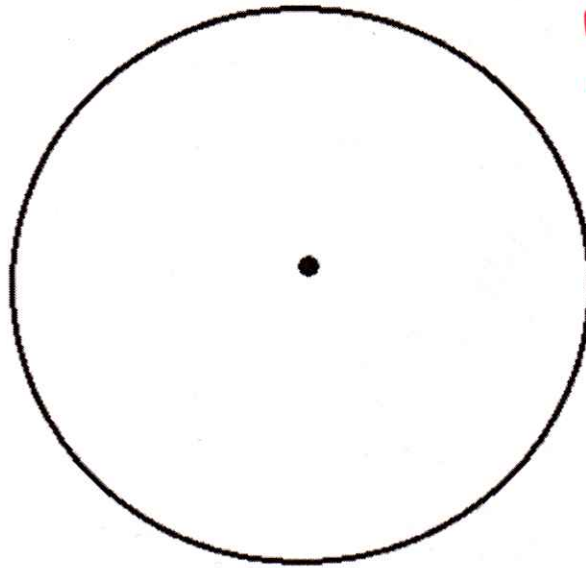WS 2.1: Pie/Bar Graphs

Name _answer key_

Date _____

1. The following table summarizes the percent of each group who said they "Always" or "Sometimes" use cell phones while driving:
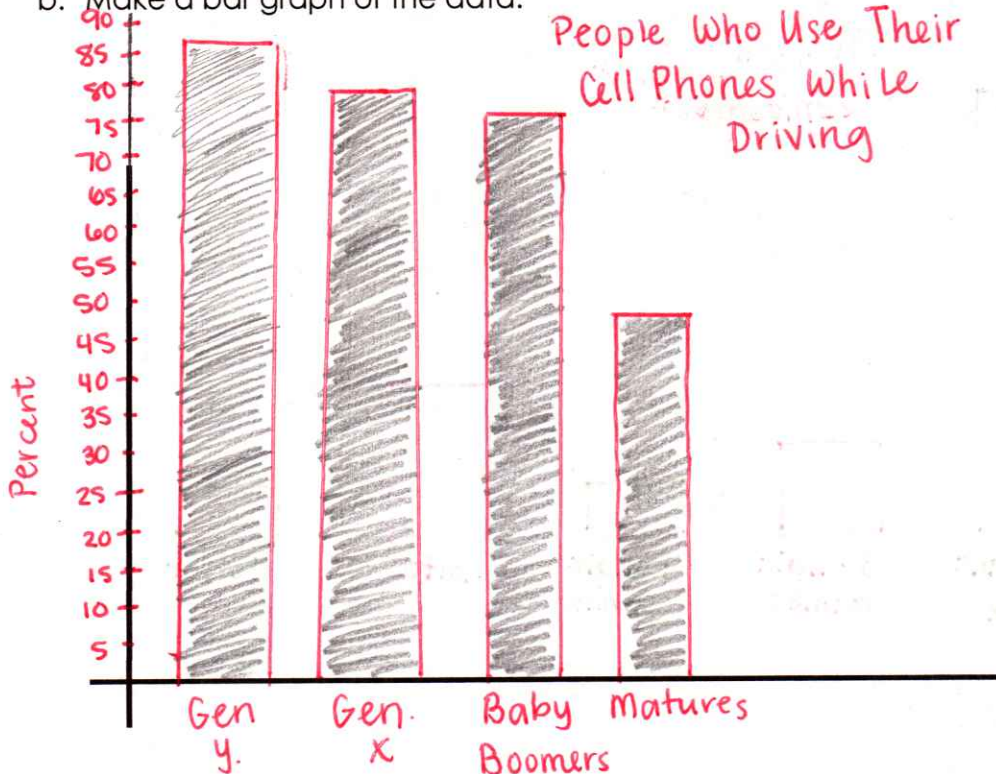
Generation Y	Generation X	Baby Boomers	Matures
86%	79%	76%	48%

   a. Can you use a pie chart to display this data? If yes, the do it. If no, then explain.

No → the percentages add up to more than 100%.

   b. Make a bar graph of the data.

People Who Use Their Cell Phones While Driving

2. States sell many lottery tickets. The following table shows where the money comes from. Make a bar graph and a pie graph displaying the data.

Game	Sales (millions of $$)	Percent	Angle
Instant Games	29,736	56.7%	204° (180°+24°)
Three-digit games	5,586	10.7%	39°
Four-digit games	3,499	6.7%	24°
Lotto	10,014	19.1%	69°
Other	3,579	6.8%	24°
Total	**52,414**	100%	36°

Types of Games

Lottery Sales

Name _____

Date _____
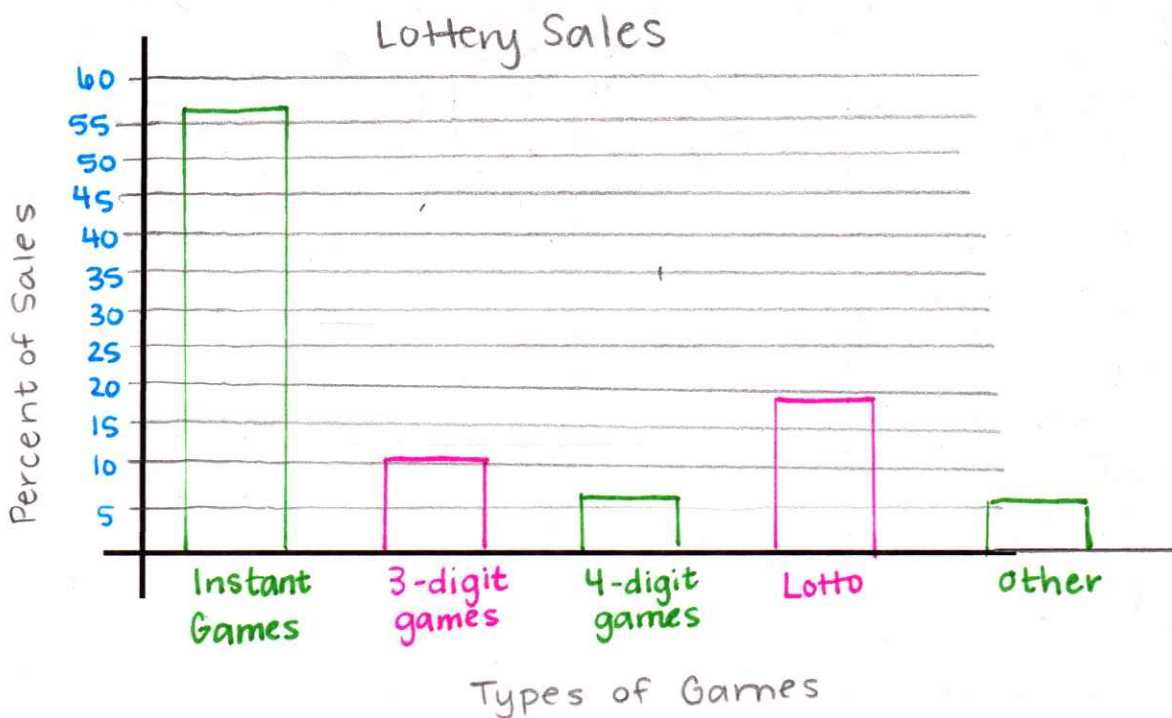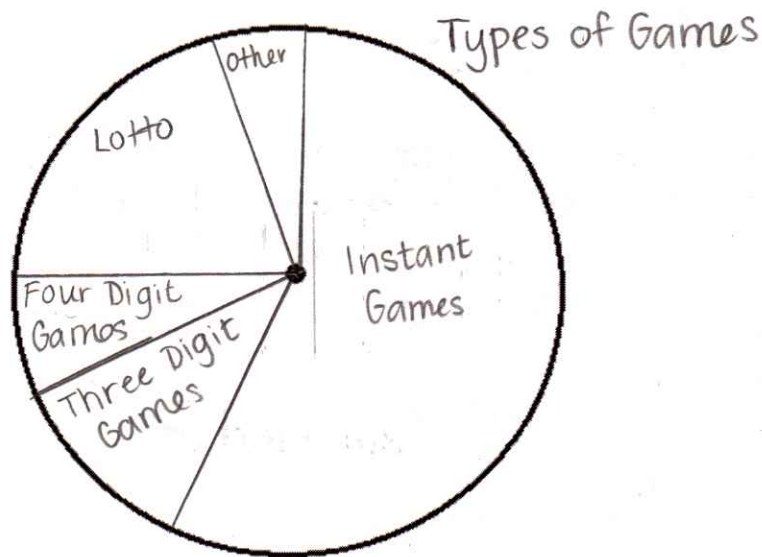
3. In the Statistical Abstract of the United States, we find these data on the marital status of adult American women as of 2007:

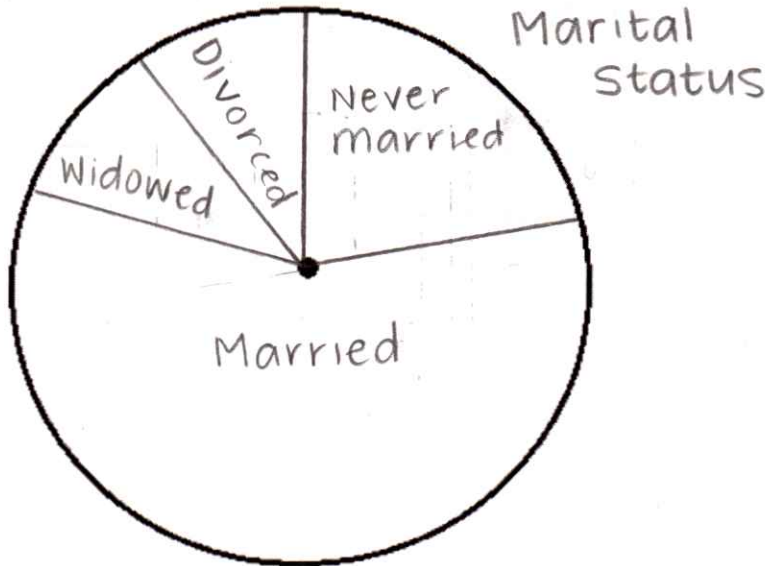| Marital Status	Count (thousands)	Percent	Angle
Never Married	25,262	22%	79°
Married	65,128	56.7%	204° (180 + 24)
Widowed	11,208	9.8%	35°
Divorced	13,210	11.5%	41°
Total	114,807	100%	——

a. How many women were not married in 2007?

49,680,000

b. Can you create a pie chart from the data? If so, make a pie chart for the data.

Marital Status

c. Make a bar graph to show the distribution of marital status.

Marital Status of Adult Women
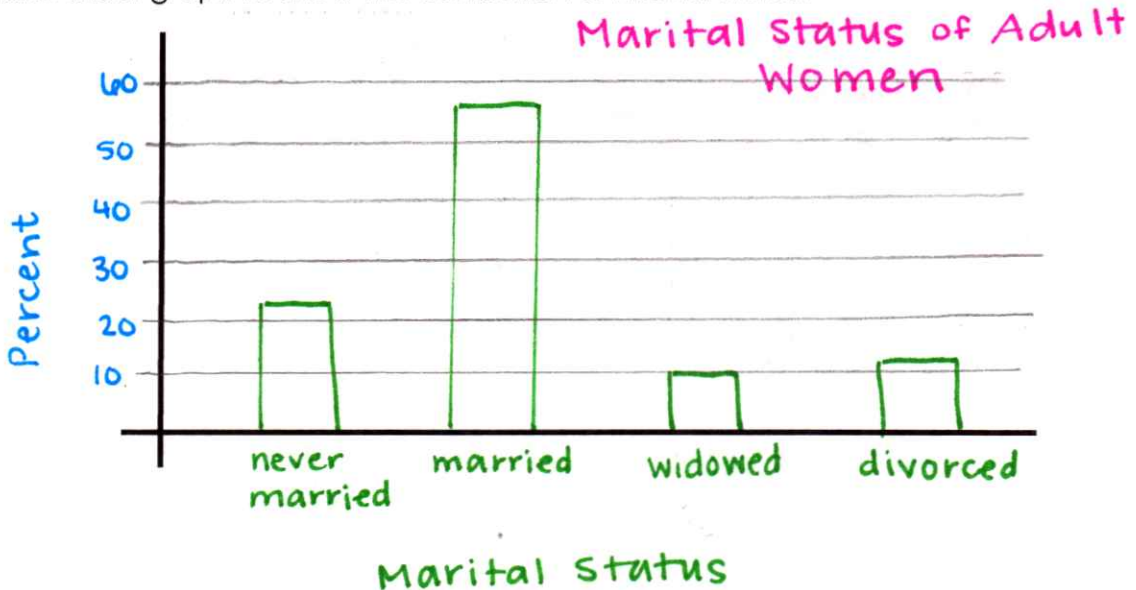
4. For Question #1, what is the sum of the counts for the four marital status categories? Why is this sum not equal to the total given in the table?

rounding → the counts given are in thousands

5. A survey of college freshmen asked what field they planned to study. The results: 25.2% arts and humanities, 19.3% business, 7.1% education, 16.6% engineering and science, 7.8% professional, and 15.3% social science.
   a. What percent plan to study fields other than those listed?

   8.7%

   b. Make a graph comparing the percents of college freshmen planning to study various fields.

Fields of Study - Freshman Class
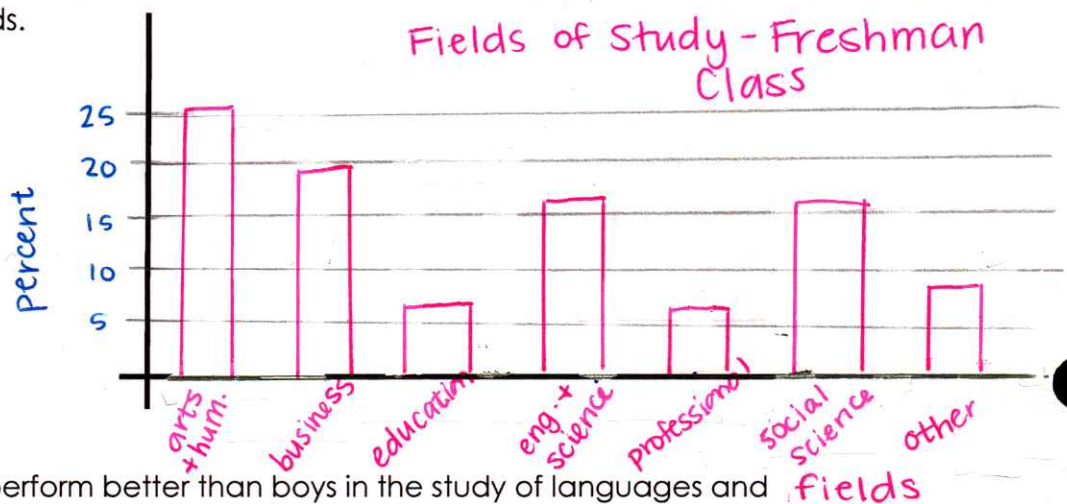
6. Is it true that girls perform better than boys in the study of languages and fields so-called soft sciences? Here are several AP subjects and the percent of exams taken by female candidates in 2007:

English Language/Comp	63%
French Language	70%
Spanish Language	64%
Psychology	65%

a. Why can we NOT use a pie chart to display this data?

the percentages don't add up to 100%.

b. Make a bar graph of the data (order the bars smallest to largest)

c. Do these data answer the question about whether girls perform better in these subject areas?

No → there is no data about how the boys did

AP Tests