Pg. 38-39 #24, 26

Review Worksheet

(on next slide)

24. a. 212/359 = 59.1%

b. 107/212= 50.5%

c. 107/195 = 54.9% **Assuming that student cars in the lot are owned by the students***

d. 195/359 = 54.3% students and 164/359 = 45.7% staff. (See page 22 in text for marginal explanation)

e. 107/212 = 50.5 students and 105/212 = 49.5 for staff. (See page 24 in text for conditional distribution explanation)

26. a. American = 59.1% European = 12.5% Asian = 28.4%

b. American = 54.9% European = 16.9% Asian = 28.2%

c. American = 64.0% European = 7.3% Asian = 28.7%

d. Not independent because the distributions of origin are the not the same for students and staff. For example, a higher percentage of staff drive American cars (64%) compared to only 55% of students who drive American cars.

Ch. 2 Summary Answers:

Pg

7 1. Think, Show, Tell

7 2. Clear, Concise, Complete, In Context

8 3. picture

9 4. Frequency tables

9 5. relative frequency, percent

11 6. bar chart

12 7. pie chart, slice

17 8. contingency table

17 9. marginal distribution

18 10. conditional distribution, proportions

18 11. Survived (Alive)

19 12. Perished (Dead)

27 13. different, associated

27 14. independent

28 15. independent, associated

28 16. associated

29 17. independent

Packet pg. 43

Statistics Chapter 2: Review B – KEY

The Pew Research Center conducts surveys regularly asking respondents which political party they identify with. Among their results is the following table relating prefer political party and age (http://people-press.org)

Age	Party: Republican	Democrat	Others	Total
18-29	2636	2738	4765	10139
30-49	6871	6442	8160	21473
50-64	3896	4286	4806	12988
65+	3131	3718	2934	9784
Total	16535	17183	20666	54384

1. Identify the variables, tell their possible values, and identify each variable as categorical or quantitative.

   Party – Categorical variable with values Republican, Democrat, Other
   Age – Categorical variable with values 18 – 29, 30 – 49, 50 – 64, and 65+.

2. Identify the W's of this study. Which W's are unknown?

   Who – Not specified (probably US residents); What – Party and age range.
   Where – Not specified (Probably US); When – Not specified. Why – Opinion polling
   How – Survey.

3. What percent of people surveyed were Republicans? 16535/54384 = 30.4%
4. What percent of people surveyed were under 30 or over 65? (10139+9784)/54384 = ~~24.4%~~ 36.6%
5. What percent of the people classified as "Other" were under 30? 4765/20666 = 23.1%
6. What percent of the people under 30 were classified as "Other"? 4765/10139 = 47.0%
7. What is the marginal distribution of ages?

   18.6% of the respondents were 18 – 29 years old, 39.5% were 30 – 49, 23.9% were 50 – 64 and 18.0% were over 65 years old. 10139/54384 21473/54384 12988/54384 9784/54384

8. Find the conditional relative frequency of ages among democrats.

   15.9% of the Democrats were 18 – 29 years old, 37.5% were 30 – 49, 24.9% were 50 – 64 and 21.6% were over 65 years old. 2738/17183 6442/17183 4286/17183 3718/17183

9. Do you think party affiliation is independent of age? Give statistical evidence to support your conclusion.

   There is some evidence of an association between party affiliation and age. Although the conditional distributions of age (from youngest to oldest) for the Democrats (15.9%, 37.5%, 24.9%, 21.6%) and Republicans (15.9%, 41.6%, 23.6%, 18.9%) were similar, the conditional distribution of age for the Other category (23.1%, 39.5%, 23.3%, 14.2%) showed a slightly higher percentage of younger respondents and a slightly lower percentage of older respondents than the two main political parties.

   #8

   2636/16535
   6871/16535
   3896/16535
   3131/16535