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Section 1C

1.1 There are 9 variables

1.2 There are observations on 11 people

1.4 Shoe size is numerical because its values are numbers

Eye color is categorical because its values are categories

1.12

Unstacked

The stacked form is:

Age	Meeting time
24	Noon
18	Noon
21	Noon
20	Noon
20	Noon
31	5 p.m.
34	5 p.m.
46	5 p.m.
47	5 p.m.
50	5 p.m.

1.16

1.a

	Men	Women	Total
Work	15	65	80
Not Work	23	28	51
	38	93	131

1.b

$15/38 = 39.47\%$. So 39.47% of men worked

1.c

$23/38 = 60.53\%$. So 60.52% of men did not work

1.d

$65/93 = 69.89\%$. So 69.89% of women worked

1.e

$80/131 = 61.07\%$. So 61.07% of people worked

1.f

$65/80 = 81.25\%$. So 81.25% of people worked were female

1.g

$15/80 = 18.75\%$. So 18.75% of people worked were male

1.h

$800 \times 69.89\% = 559$ women worked

1.24

$12,608,000 / 0.055 = 22,923,636$ was population size

1.34

Controlled, because researchers randomly assign patients to the two groups. Also, placebo is used.

1.36

Observational Study. The students are not randomly assigned to wear uniforms.

Chapter 2

2.2

a) 21 people have unhealthy cholesterol level

b) $21/93 = 22.6\% > 18\%$ So there is a greater percentage of people with unhealthy cholesterol level compared with 2010.

2.6

A. 18 hours and 19 hours

B. 8 people exercise for less than 2h

C. 5 people exercise for more than 10h

D. $5/50 = 10\%$, so 10% people exercise for more than 10h

2.8

Detroit has the lowest rent.

Seattle has greatest spread.

Distribution is left-skewed.

2.16

A.

Women:

Distribution is almost symmetric and bimodal with modes at 100 dollars and 200 dollars

Men:

Distribution is left skewed and bimodal with modes at 100 dollars and 200 dollars

B.

Women tends to spend more on clothes.

C.

Distribution of women's expenditure is more spread

2.18

A. The distribution is unimodal and right-skewed

- B. Typically 2 siblings
- C. About 90 people do not have siblings
- D. $90/2000 = 4.5\%$ So 4.5% of adults surveyed have no siblings

2.22

1-A, 2-B, 3-C

2.38

- A. About 7.5 million
- B. About 5 million
- C. No. The result from the graph does not support causation.
- D. Pareto chart

2.48

A bar chart. Bar chart is well-suited for showing the proportion of observations that belong to each category. Also we want to observe the relative frequency of each group, and bar chart is suitable for that.