Study Guide Answers 5/3/18

1 a) Girls: $y = 6.61x + 73.90$

Boys: $y = 6.51x + 75.47$

b.) Girls -

correlation coefficient (r) = 0.9975

The association between the two variables is very strong.

Boys -

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The association between the two variables is very strong.

c.) Girls -

y-intercept: (0, 73.90)

When a girl is born (0 years old) its estimated that she will be 73.90cm long (tall).

Boys -

y-intercept: (0, 75.47)

When a boy is born (0 years old), we estimate that he will be 75.47 cm long (tall).

d.) Yes, 80 cm isn't too far away from the rest of the data for either.

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2. a.) slope: 14.65
For every 1 foot drilled, the cost increases by 14.65

b.) Yes, the residual plot is scattered, indicating that this model is a good fit

c.) Direction - positive
Justification - positive slope, positive correlation coefficients

d.) The correlation coefficient is 0.929 indicating that there is a strong association.

e.) (80, 2200) (230, 4600)
These can be considered outliers. They are approximations of the points.

3. a.) Chip Z has some clustered around 131-134. Chip W is irregular. Chip Z has a few POTENTIAL outliers.
↳ 133.5 + 1.5(2) = 136.5

look at difference between the two ← b.) Chip Z has two confirmed outliers. Because the data has some cluster, these outliers don't affect the mean too much. However, they result in a larger standard deviation. The IQR is less affected by these outliers. The rest of the data is fairly clustered.

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3 c.) Chip Z because even though it has outliers, it has a smaller IQR. Because the data is shaped irregularly, we use the median as the measure of center & the IQR as the measure of spread.

4. a.) The data is more spread out after 10 years. More people have higher salaries.

b.) No, you don't have the data tables, so you don't know

5. a.) No, you don't have the data table of frequency table.

b.) 75%

c.) (C)

d.) ET: When the rewards were equal, the subject consistently performed with few prompts.
QI: When the subject was asked to perform for a lower reward, they still fairly consistently performed with few prompts.
EC: Even though the partner didn't have to perform for the reward, the subject still consistently performed with lower scores.

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RI: The lack of reward required more prompting before the trick was performed.

Overall: As long as the subject pup got some reward, he performed with consistently less prompting. He got slightly sloppy when his reward was less than his partners, but still performed consistently low.

6. a.) $\frac{61}{100} = 0.61$ 61%.

b.) (Calculate what percentage of each class carry backpacks.)

F: $\frac{8}{11}$ 72% So: $\frac{16}{22}$ 72%.

J: $\frac{18}{32}$ 56% Se: $\frac{19}{35}$ 54%.

The marketing chair should target freshmen & sophomores because they had the largest percent of their class who carried a backpack.

c.) Yes, looking at the calculations above, you can be pretty certain that a freshman or sophomore carry a backpack. If it's a junior or senior it could go both ways.