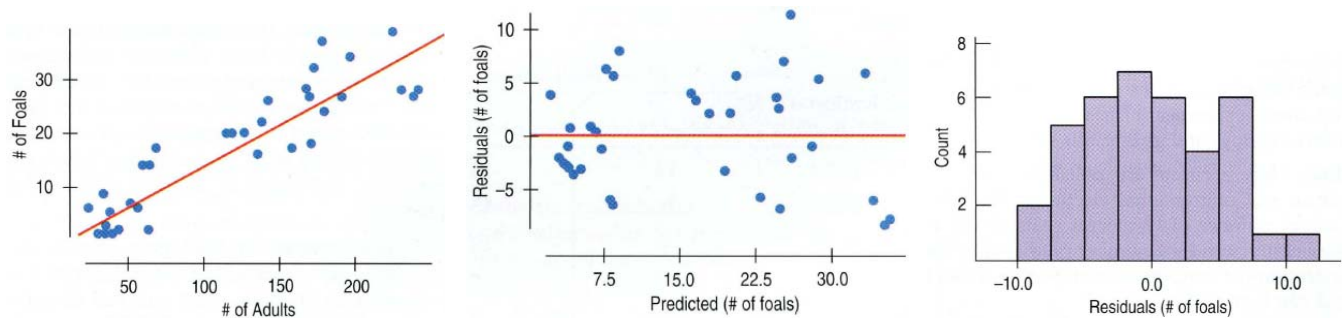


AP STATISTICS

Name: _____ Per: _____

Regression Computer Printouts Practice

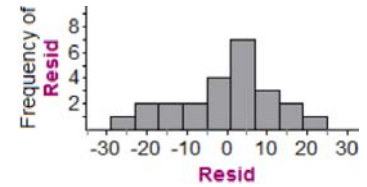
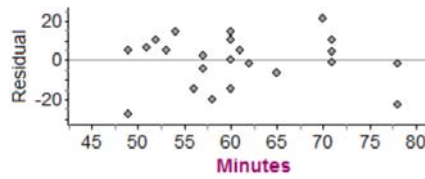
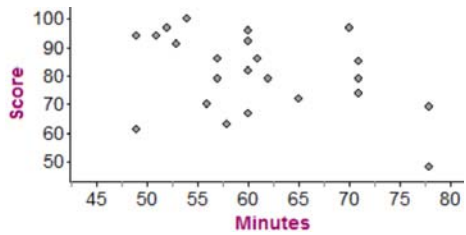
1. Large herds of wild horses can become a problem on some federal lands in the West. Researchers hoping to improve the management of these herds collected data to see if they could predict the number of foals that would be born based on the size of the current herd. Data from a random sample of 38 herds is summarized below:



Variable	Coefficient	S.E. of Coeff	T-ratio	Probability
Adults	0.153969	0.0114	13.5	≤ 0.0001
Constant	-1.57835	1.492	-1.06	0.2970
S = 5.67		R-sq = 79%		R-sq adj = 80.5%

- a) Is a linear model appropriate for this data? Explain.
- b) State the least squares regression line equation in context.
- c) Interpret the meaning of the slope of the regression line *in context*.
- d) If appropriate, interpret the meaning of the y-intercept. If not appropriate, explain why not.
- e) Interpret R^2 in context.
- f) Interpret s_e in this context.

2. Can amount of time taken by a student on a test be used to predict the exam score? The test scores on a probability exam for 24 students at Podunk High School were recorded by their Statistics instructor, along with the amount of time (in minutes) that it took for each student to finish the exam. The data from the regression analysis is shown below.



Predictor	Coefficient	S.E. of Coef	T-statistic	P-value
Intercept	119.64	19.28	6.204	0.0000
Minutes	-0.6314	0.3133	-2.016	0.0562
S = 12.641		R-sq = 15.59%		R-sq adj = 11.75%

- Is a linear model appropriate for this data? Explain.
- State the least squares regression line equation in context.
- Interpret the meaning of the slope of the regression line *in context*.
- If appropriate, interpret the meaning of the y-intercept. If not appropriate, explain why not.
- Interpret R^2 in context.
- Interpret s_e in this context.
- Predict the exam score for a student who completes the exam in 20 minutes. Comment on the reasonableness of this prediction.