

STATISTICS

SECTION II

Part A

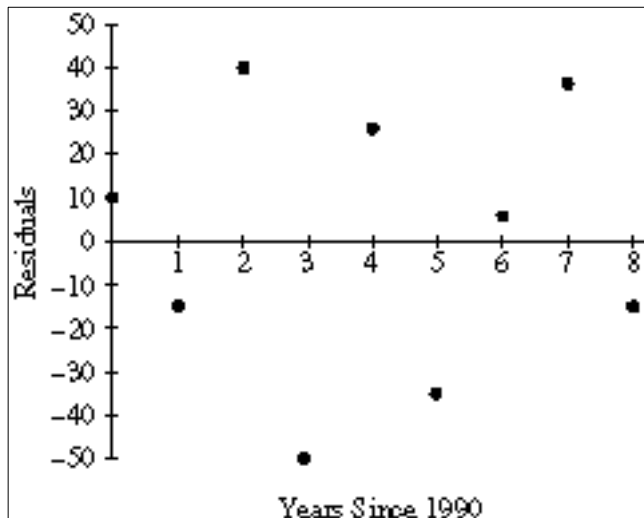
Questions 1-5

Spend about 65 minutes on this part of the exam.

Percent of Section II grade—75

Show all your work. Indicate clearly the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy of your results and explanation.

1. Lydia and Bob were searching the Internet to find information on air travel in the United States. They found data on the number of commercial aircraft flying in the United States during the years 1990-1998. The dates were recorded as years since 1990. Thus, the year 1990 was recorded as year 0. They fit a least squares regression line to the data. The graph of the residuals and part of the computer output for their regression are given below.



Predictor	Coef	Stdev	t-ratio	p
Constant	2939.93	20.55	143.09	0.000
Years	233.517	4.316	54.11	0.000

s = 33.43

- Is a line an appropriate model to use for these data? What information tells you this?
- What is the value of the slope of the least squares regression line? Interpret the slope in the context of this situation.
- What is the value of the intercept of the least squares regression line? Interpret the intercept in the context of this situation.
- What is the predicted number of commercial aircraft flying in 1992 ?
- What was the actual number of commercial aircraft flying in 1992 ?

