

SPRING FINAL

Confidence Intervals

#1 Big Game Tickets is a national on-line ticket broker that connects buyers and sellers of concert and sporting event tickets. The company serves millions of customers every month. The CEO has asked his marketing team to study the age and gender of its customers by ticket type. This information is not currently captured in the purchase data collected when customers place orders. You, as her administrative assistant, performed five separate random samples for five ticket categories – Pro Football, College Football, College Basketball, Concerts and Plays. The data is provided in an Excel worksheet.

Question: How old are you? Please give your answer in years.

A1. Estimate a 97% confidence interval for the mean “age in years” in the population of Big Game Ticket pro football customers.

B1. Estimate a 96% confidence interval for the mean “age in years” in the population of Big Game Ticket college football customers.

C1. Estimate a 94% confidence interval for the mean “age in years” in the population of Big Game Ticket college basketball customers.

D1. Estimate a 92% confidence interval for the mean “age in years” in the population of Big Game Ticket concert customers.

E1. Estimate a 98% confidence interval for the mean “age in years” in the population of Big Game Ticket play customers.

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#2 In different regional surveys, customers were asked their gender. The results are shown below.

<u>Ticket Type</u>	<u>Male Responses</u>	<u>Female Responses</u>	<u>Total Responses</u>
Pro Football	77	44	121
College Football	75	88	163
College Basketball	53	49	102
Concerts	68	79	147
Plays	23	74	97

A2. Estimate a 90% confidence interval for the proportion of male customers in the population of Big Game Ticket college basketball customers.

B2. Estimate a 95% confidence interval for the proportion of female customers in the population of Big Game Ticket concert customers.

C2. Estimate a 90% confidence interval for the proportion of female customers in the population of Big Game Ticket play customers.

D2. Estimate a 95% confidence interval for the proportion of male customers in the population of Big Game Ticket pro football customers.

E2. Estimate a 90% confidence interval for the proportion of female customers in the population of Big Game Ticket college football customers.