1) Sixty-four students in an introductory college economics class were asked how

many credits they had earned in college, and how certain they were about their

choice of major.

At α = .01, is the degree of certainty independent of credits earned?

Data to construct the contingency table are below.

0-9 Credits Earned 10-59 Credits Earned

Very Uncertain: 12 Very Uncertain: 8

Somewhat Certain: 8 Somewhat Certain: 4

Very Certain: 3 Very Certain: 10

50 or More Credits Earned

Very Uncertain: 1

Somewhat Certain: 11

Very Certain: 7

2) A student team examined parked cars in four different suburban shopping malls.

One hundred vehicles were examined in each location.

At α = .05, does vehicle type vary by mall location?

Data to construct the contingency table are below.

Car Minivan

Somerset: 63 Somerset: 21

Oakland: 49 Oakland: 15

Great Lakes: 44 Great Lakes: 18

Jamestown: 46 Jamestown: 13

Full-sized Van SUV

Somerset: 2 Somerset: 27

Oakland: 3 Oakland: 19

Great Lakes: 3 Great Lakes: 26

Jamestown: 2 Jamestown: 12

Truck

Somerset: 14

Oakland: 6

Great Lakes: 17

Jamestown: 9

3) High levels of cockpit noise in an aircraft can damage the hearing of pilots who

are exposed to this hazard for many hours. A Boeing 727 co-pilot collected 61

noise observations using a handheld sound meter. Noise level is defined as

“Low” (under 88 decibels), “Medium” (88 to 91 decibels), or “High” (92 decibels or

more). There are three flight phases (Climb, Cruise, Descent).

At α = .05, is the cockpit noise level independent of flight phase?

Data to construct the contingency table are below.

Low Noise Level Medium Noise Level High Noise Level

Climb: 6 Climb: 18 Climb: 1

Cruise: 6 Cruise: 8 Cruise: 13

Descent: 2 Descent: 3 Descent: 14

4) Can people really identify their favorite brand of cola? Volunteers tasted Coca-

Cola Classic, Pepsi, Diet Coke, and Diet Pepsi, with the results shown below.

At α = .05, is the correctness of the prediction different for the two types of cola drinkers? Could you identify your favorite brand in this kind of test? Since it is a 2 x 2 table, try also a two-tailed two-sample z test for π1 = π2 and verify that z2 is the same as your chi-square statistic.

Which test do you prefer? Why?

Data to construct the contingency table are below.

Yes, got it right No, got it wrong

Regular Cola: 7 Regular Cola: 12

Diet Cola: 20 Diet Cola: 7