Name: _____ Hour: _____ Date: _____

Do you prefer learning at school or home?

Do students prefer to learn at school, from home, or a combination of both (hybrid).
A researcher wonders if the responses would differ for high school and college students.
A simple random sample of 40 high school students and a separate random sample of
60 college students gives the following survey results:

Type of Student

		High School	College	Total
	School	18	12	30
Learning	Home	6	14	20
Preference	Hybrid	16	34	50
	Total	40	60	100

1. How many samples? What populations are they from?

2. How many variables are we measuring?

3. Write down hypotheses for a significance test.

H_0:

H_a:

4. Now we will use a chi-square test to determine if there is convincing evidence of a
   difference in the distribution of learning preference between high school and college
   students. Complete the table of expected counts below.

Type of Student

		High School	College	Total
	School			30
Learning	Home			20
Preference	Hybrid			50
	Total	40	60	100

Name: _____ Hour: _____ Date: _____

5. Use your work on the front page to complete a 4-step significance test.

STATE: Hypotheses: Significance level:

PLAN: Name of procedure:

            Check conditions:

DO:

Specific Formula: Picture:

Work:

                                                     Test statistic:

                                                     P-value:

CONCLUDE:

6. Explain how this test is different from a chi-square test for goodness of fit?

Chi-Square Test of Homogeneity

Important ideas:

Homework (2016 #2)

Product advertisers studied the effects of television ads on children's choices for two new snacks. The advertisers used two 30-second television ads in an experiment. One ad was for a new sugary snack called Choco-Zuties, and the other ad was for a new healthy snack called Apple-Zuties.

For the experiment, 75 children were randomly assigned to one of three groups, A, B, or C. Each child individually watched a 30-minute television program that was interrupted for 5 minutes of advertising. The advertising was the same for each group with the following exceptions.

- The advertising for group A included the Choco-Zuties ad but not the Apple-Zuties ad.
- The advertising for group B included the Apple-Zuties ad but not the Choco-Zuties ad.
- The advertising for group C included neither the Choco-Zuties ad nor the Apple-Zuties ad.

After the program, the children were offered a choice between the two snacks. The table below summarizes their choices.

Group	Type of Ad	Number Who Chose Choco-Zuties	Number Who Chose Apple-Zuties
A	Choco-Zuties only	21	4
B	Apple-Zuties only	13	12
C	Neither	22	3

(a) Write hypotheses for performing a chi-square test of homogeneity

(b) Check the conditions for doing a chi-square test of homogeneity