Assignment 5 Template

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<u>Problem 3:</u> Fill in the information below based on your data which were generated using your ID number as the seed for the random number generator.

Number of observations = 106

Insert the table of observed frequencies here.

		Height Indicator		
Smoker Indicator	**Average**	**Short**	**Tall**	
Non-smoker	**22**	**12**	**19**	
Smoker	**13**	**24**	**16**	

Insert the table of expected frequencies here.

Smoker Indicator	**Average**	**Short**	**Tall**
Non-smoker	**17.5**	**18**	**17.5**
Smoker	**17.5**	**18**	**17.5**

The hypothesis of interest is that the variate smoking and the variate height are independent variates.

The observed value of the likelihood ratio statistic for testing this hypothesis

= 6.675525

The degrees of freedom for the Chi-squared distribution = 2

The p-value = 0.03551633

Insert your conclusion regarding the hypothesis here.

Since this p value is greater than 0.05, the hypothesis is likely not true.

The observed value of the Pearson Goodness of Fit statistic for testing this hypothesis = 6.571429

The degrees of freedom for the Chi-squared distribution = 2

The p-value = 0.03741385

Insert your conclusion regarding the hypothesis here.

Since p > 0.05, this is not a good hypothesis

Suppose for your data you found evidence of a relationship between smoking and height. Can you conclude that a person's height affects whether they smoke or not? Why or why not?