Assignment 4

Due Date: November 18, 2021, 11:59PM

Name 1 and SFSU ID	
Name 2 and SFSU ID	

Collaboration Policy

You are strongly encouraged to work in pairs, but you must follow these guidelines:

1. You must work on *all* questions together. You may not simply partition the work.

2. You may not discuss the questions with other groups or individuals.

Submission via iLearn

Submit your answers via iLearn as a *single **pdf** file* with the name **csc665_assign4_lastname_sfsuid**. Write your name and SFSU ID (and the name and SFSU ID of your partner) at the top.

Academic Honesty

Plagiarism is a serious offense and will be dealt with harshly. I consider plagiarism to be the unattributed use of an external source (e.g., another student, a web site, a book) in work for which a student takes credit, or the inappropriate use of an external source whether or not attribution is made. The seriousness of the offense depends on the extent to which the student relied upon the external source. All written responses must be your own. All work ideas and quotes that originate from elsewhere must be cited according to standard academic practice. Students caught cheating will automatically fail the course.

1 [20 points] Bayes Net Inference

P(G)	
+g	0.1
-g	0.9

P(A|G)		
+g	+a	1.0
+g	-a	0.0
-g	+a	0.1
-g	-a	0.9
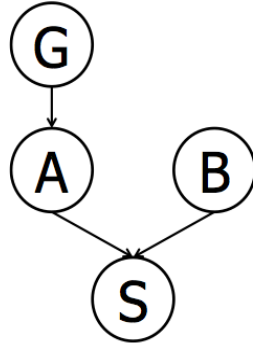
P(B)	
+b	0.4
-b	0.6

P(S|A, B)			
+a	+b	+s	1.0
+a	+b	-s	0.0
+a	-b	+s	0.9
+a	-b	-s	0.1
-a	+b	+s	0.8
-a	+b	-s	0.2
-a	-b	+s	0.1
-a	-b	-s	0.9

G

A   B

S

Compute the values of the following probabilities:

1. [**3 points**] $P(+g, +a, +b, +s) =$

2. [**3 points**] $P(+a) =$

3. [**3 points**] $P(+a| + b) =$

4. [**5 points**] $P(+a| + s, +b) =$

5. [**3 points**] $P(+g| + a) =$

6. [**3 points**] $P(+g| + b) =$