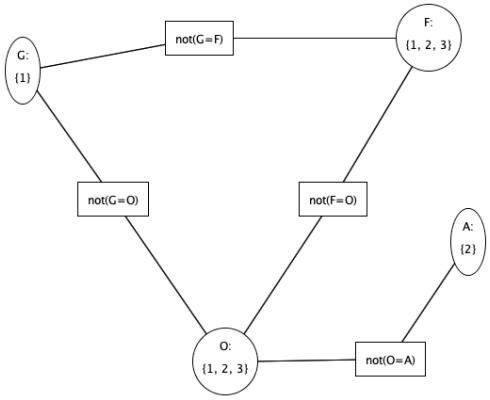
CPSC 322: Introduction to Artificial Intelligence (Section 2)
Solving CSPs using arc consistency and domain splitting
Do this exercise in pairs. If there's an odd number, do it in a group of 3.
Submit the sheet before leaving.

Name of Student (last, first)	Student Number

Question1: Arc consistency
Consider the following subset of the constraint network we worked on last week. Trace the arc consistency algorithm on the network. Show at least 4 to 6 iterations. For each iteration, show TDA and domain values.



Variables:
Google (G), Facebook (F), OpenAI (O), Apple (A)

Iteration 1:
TDA =
$\{ < F, G \neq F > , < F, F \neq O > , < O, G \neq O > , < O, F \neq O > , < O, O \neq A > , < A, O \neq A > , < G, G \neq F > , < G, G \neq O > \}$
Domains:

Question 2: Domain splitting

Variables: A, B, C; Domains: $\{1,2,3,4\}$; Constraints:$A = B, B = C, A = C$

Solve this CSP using arc consistency and domain splitting. How many solutions are there?