Thanks so much for coming today! As a fun Friday warm-up, please work on the following puzzles.

**Puzzle #1**

Here is a map of the Western United States.

You are given four colours:
Apple (A), Brown (B), Crimson (C), Denim (D)

Your task is to color the 17 states, with each state being assigned one of these four colors. You choose the color of each state.

There's only one rule: if two states share a common border, they cannot receive the same color. (For example, Utah and Arizona must have different colors, but Utah and New Mexico do not.)

You are given 1 penalty point for every state whose color is D.

In other words, your goal is to color this map using only the colors A, B, and C.

In your solution, how many penalty points did you earn?
Puzzle #2

Several individuals volunteer for various non-profit organizations in the small town of Squamish, BC. The organizations consist of the following people:

- Arts Council: Toby, Larry, Bianca
- Business Improvement Association: Bianca, Meg
- Climate Action Network: Krystle, Toby
- Dance Academy: Toby, Patricia, Peter
- Environmental Conservation Society: Krystle, Larry, Meg
- Friends of the Squamish Library: Andrea, Patricia, Larry
- Garibaldi Lake Hiking Club: Andrea, Peter

Each of the seven organizations wants to schedule an hour-long meeting on Saturday morning; each person in the group must be present for the meeting. The eight individuals want to get their meetings over with as soon as possible, so they can head to the Farmer’s Market.

In your solution, how many hour-long time slots did you need?

Puzzle #3

At your school, how are end-of-year school exams scheduled? Who does it, and what “algorithm” do they follow?

At your school, how are teachers matched to courses and classrooms? Who does it, and what “algorithm” do they follow?

Can either of these complex real-life problems be solved using the methods we’ve discovered thus far in this workshop? If so, how?