Recipe Name: Spot It!

Input:

- mod: A prime integer representing the modulus. Defines the projective plane.

Output:

- deck: A sequence of cards, each card being a sequence of point indices incident on lines in the projective plane.

Steps:

1. generate_all_points:
   Inputs:mod, a prime integer representing the modulus
   Outputs:A sequence unique_points of (x,y,z) points
   1.1 Initialize an empty sequence named points.
   1.2 For each integer x from 0 to mod , do
   - For each integer y from 0 to mod , do
   - For each integer z from 0 to mod , do
   - Append the (x, y, z) to points.
   1.3 Remove the (0,0,0) point (invalid point in projective geometry).
   1.4 Initialize an empty sequence named uniquePoints.
   1.5 For each item in points do
   - If item is not equivalent to any point in uniquePoints
   - unique_points←item
   1.6 Return uniquePoints, representing all distinct points in the projective plane
2. Generate Lines:
   - Assign lines to be the sequence uniquePoints
3. create_cards:
   Inputs:sequence points representing all points in modulus, sequence lines representing all lines in modulus, mod a prime integer representing the modulus
   Outputs:A sequence deck representing the card sequences
   3.1 Initialize empty sequence deck.
   3.2 For each line in lines do
   - Initialize empty sequence card.
   - For each integer index and point in uniquePoints, do
   - If point lies on line by incident(point,lines,mod)

- card←index

deck←card

3.3 Return deck: the sequence of cards for Spot It!

4. Run spot it module to play game

Discussion:

No, it would not be possible because mod needs to be a prime number and in order to have 40 cards the projective geometry rules of Spot It! Every card must have the same number of images and every card must have one image, and only one image, in common with every other card in the deck. So it would not be possible to achieve with 40 cards due to the modulus requirements of projective geometry.