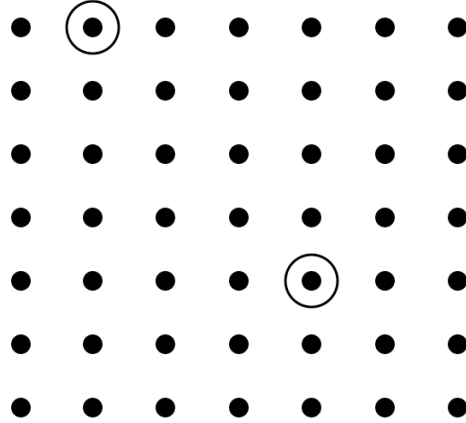
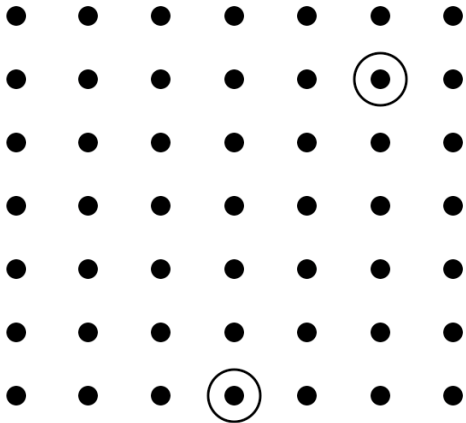


Math 532: Homework 5

(1) Two points in the first 7×7 array below have been circled. Using the model for a finite affine plane of order 7 discussed in class, finish circling the points that belong to the same line as the given circled points.

(2) Repeat problem 1 for the second array below.



(3) Two points have been circled in the first array below. Suppose we wish to make use of the model discussed in class to draw the line passing through these two points (don't do it) in a finite projective plane of order 7. Since there are additional points in a finite projective plane of order 7, we would like to know the slope of this line modulo 7. Find the slope of the line passing through the indicated points and make your answer either 0, 1, 2, 3, 4, 5, 6, or undefined.

(4) Using the model for a finite projective plane of order 7 discussed in class, draw four (you choose) of the lines with slope 3 in the second 7×7 array below. Be sure to add any additional points that may be needed.

