

UW Math Circle  
January 12th, 2017

1. How many bishops can be put on an  $8 \times 8$  chessboard so that no two attack each other?
2. Hannah and Sally each have several poker chips worth 3, 6, and 15 cents. Sally wants to give Hannah a dollar— can they do this by exchanging chips?

These next three are from last week's worksheet, but we didn't have much time to spend on them:

3. You have an  $8 \times 8$  chessboard, and you want to color some squares green. What is the largest number of squares that you can color green so that there is no L-shaped tromino in your chessboard colored green?



4. You have 12 integers. Show that two of them have a difference that is divisible by 11.
5. Show that there is an integer whose decimal representation consists only of 1s and that is divisible by 2017.