

5. A class of 15 students gathers 100 rocks. Show that at least two students gathered the same number of rocks.
6. You have 12 integers. Show that two of them have a difference that is divisible by 11.
7. You have an 8×8 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?



8. Show that there is an integer whose decimal representation consists only of 1s and that is divisible by 2017.