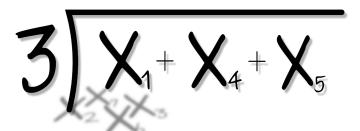# Math Challenge Problem
for late September, 2013

Three divided by 3

Suppose I give you a set of positive integers. Can you find three numbers in the set whose sum is divisible by 3? Not always: for example, if the set was $\{1, 3, 6\}$ then there is only one choice for your three numbers, and $1 + 3 + 6 = 10$ which is not divisible 3.

Okay, well what if I gave you a larger set? Could you always pick three out of set of, say, seven numbers to get a sum divisible by 3? Could the set be smaller?

The Challenge: How big does the set I give you need to be to guarantee that you can find three numbers in the set whose sum is divisible by 3?

Submit solutions to Ross 2239G or to `oscar.levin@unco.edu` by **Friday, October 4**.

New this semester: PRIZES!
A winner will be randomly selected from all correct answers received for each challenge problem to receive a fun math prize of his or her choice.