



This brainteaser was written by Derrick Niederman.

Which decade in the 21st century will contain no year that is divisible by 11?



Solution: the 2080s.

Both 2200 and 110 are divisible by 11. Consequently, $2200 - 110 = 2090$ is also divisible by 11, so that 2090 is one of the years in the 21st century that is divisible by 11. The last year before 2090 divisible by 11 is $2090 - 11 = 2079$. If 2079 and 2090 are both divisible by 11, then none of the years in between — 2080, 2081, 2082, ..., 2089 — are divisible by 11. Consequently, the 2080's are the decade you're looking for.

You could have also approached this one from the other direction. Since $2000 \div 11 = 181.81$, then $11 \times 182 = 2002$ is the first year in the 21st century divisible by 11. Then just keep adding 11 to show that 2013, 2024, 2035, 2046, 2057, 2068, 2079, and 2090 are also multiples of 11. From this list, you can see that all years in the 2080's were skipped.