



10. Let  $N$  be the smallest positive integer whose digits add up to 2012. What is the first digit of  $N + 1$ ?
- A 2                      B 3                      C 4                      D 5                      E 6

1280



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- 10. E** It can be deduced that  $N$  must consist of at least 224 digits since the largest 223-digit positive integer consists of 223 nines and has a digit sum of 2007. It is possible to find 224-digit positive integers which have a digit sum of 2012. The largest of these is 99 999 ...999 995 and the smallest is 59 999 ...999 999. So  $N = 59\,999\dots 999\,999$  and  $N + 1 = 60\,000\dots 000\,000$  (223 zeros).