Problem of the Week
Problem E
More of Grandpa’s Math

Arden’s Grandpa tries to challenge him in his mathematics studies by creating problems for him to solve. For one problem, Grandpa said, “I am thinking of some positive integer, let’s call it $k$, which I then multiply by the number 1357 and I end up with a product whose final four digits are 9502. Find the smallest value of $k$ that will make this work.”