**A** digital problem as [Le Monde current mathematical puzzle](https://xianblog.wordpress.com/2011/09/03/le-monde-puzzle-website/):

*Noble numbers are such that they only involve different digits and are multiple of all their digits. What is the largest noble number?*

Hmmmm…. Brute force? Since the maximal number of digits is 10, one may as well try:

k=soz=9

for (t in 1:1e3){

sol=1

while (sol<10^(k-1)){

u=sample(0:8,k);i=digit2int(u)

if (max(i%%u[u>0])==0) soz=max(soz,sol<-i)}}

which returns 9875643120… (I made the conscious choice to exclude zero from the dividers. Which was not a choice spelled out in the original question.)