AUSTRALIAN MATHS TRUST

Maths Challenge
Junior: Years 7–8
Practice Problem

J2: The Price is Perfect

On the TV show *The Price is Perfect* Chloe will win all the prizes if she can work out the mystery number.

The host of the show says, "Tonight's mystery number is the *largest* 7-digit number which has these two properties..."

- No two digits in the number are the same.
- Each of the number's digits divides into the number exactly.

J2: Questions

a. Find the three digits which cannot be in the mystery number. Explain why they must be excluded.

b. Find the mystery number. Explain why it is the largest 7-digit number that has these properties.