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. Joe, 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.

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

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

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