More digit puzzles

For those who like to play around with numbers, here are some more puzzles that involve digits. I invite readers to send in their solutions and will comment on and acknowledge the results in a future issue.

1. Find a positive integer whose cube and whose fourth powers together involve the ten digits, each appearing exactly once.

2. Last Sunday at the Backenac Anglican Church, the numbers of three hymns were posted. Little Tommy noticed that the three numbers were in the ratio $1 : 3 : 5$ and that each of the nine nonzero digits was used exactly once. What were the numbers?

3. A number and its square involve the nine nonzero digits, each used exactly once. What are the possibilities?

4. Three positive integers are such that the largest is the sum of the other two and the three numbers together involve the ten digits, each appearing exactly once. Find all the possibilities.

5. The passport office was very busy, so I took a number and sat down. I noticed that the number was a perfect square, and remarked on this to the lady sitting next to me. She responded, "My number is also a perfect square. Even more interesting is that your number is the square of the sum of the digits of my number, and my number is the square of the sum of the digits of your number." How many people will have to be served between her turn and mine?