Problem

After a successful game of marbles with three friends, Lloyd says "If only I had one more marble, I would have four times as many as Akim, five times as many as Eli, and seven times as many as Ron." What is the least number of marbles that Lloyd could have?

Hints

Hint 1 - What is the ones digit for any multiple of 5?

Hint 2 - What multiples of 4 and 7 could also be multiples of 5?

Hint 3 - How can you check your answer?

Solution

If Lloyd has n marbles, then $(n+1)$ must be a multiple of 4, and of 5, and of 7. The least multiple of these is 140. Thus Lloyd has 139 marbles.