



Problem of the Week Grade 5 and 6

Don't Lose Your Marbles!

Problem

Three friends, Lloyd, Akim, and Eli, have just played a game of marbles. Lloyd says "If only I had one more marble, I would have four times as many as Akim and five times as many as Eli." What is the least number of marbles that Lloyd could have?

Solution

We are looking for the least number that is one less than a common multiple of 4 and 5. The lowest common multiple of 4 and 5 is $4 \times 5 = 20$. One less than 20 is 19. Therefore the least number of marbles Lloyd could have is 19.

Extension

What are the other possible numbers of marbles less than 100 that Lloyd could have?

Solution to Extension

The other common multiples of 4 and 5 are the multiples of 20, namely, 40, 60, 80, and 100. Thus Lloyd could also have one less than each of these. Therefore Lloyd could have had 39, 59, 79, or 99 marbles.

