

# Quiz 2

September 30, 2022

1. Sasha keeps pet sloths in her backyard. If she divides them into 5 equal groups, 4 are left over. If she divides them into 8, 6 are left over. If she divides them into 9 equal groups, 8 are left over. What is the smallest number of sloths she could have?
2. Reduce  $47^{222}$  modulo 113.

**Hint:** Use Fermat's theorem and the fact that 113 is a prime.