

**Problem statement** a) Two students are sharing a loaf of bread. Student Alpha eats half of the loaf, then student Beta eats half of what remains, then Alpha eats half of what remains, and so on. How much of the loaf will each student eat?

b) Two students are sharing a loaf of bread. Student Alpha, now hungrier and more ferocious, eats two-thirds of the loaf, then student Beta eats half of what remains, then Alpha eats two-thirds of what remains, then Beta eats half of what remains, and so on. How much of the loaf will each student eat?

c) Now start with three students: Alpha, Beta, and Gamma. They decide to share a loaf of bread. Alpha eats half of the loaf, passes what remains to Beta who eats half, and then on to Gamma who eats half, and then back to Alpha who eats half, and so on. How much of the loaf will each student eat?