

## Challenge 2, Week 3

Let  $C_n$  be the cyclic group with  $n$  elements (think of it abstractly, or as the group of complex  $n$ th roots of unity, or the group of rotations of a regular  $n$ -gon, or the group of integers modulo  $n$  under addition, it doesn't matter).

How many of the  $n$  distinct elements of  $C_n$  generate  $C_n$  as a cyclic group? Explain your answer.