

Physical cube exercises for points

We consider the physical cube group C of 24 elements. All elements can be written as special 3 by 3 matrices with determinant equal to 1.

- (1) Find elements of orders 2, 3, and 4.
- (2) Find a non-cyclic subgroup of size 4.
- (3) Find subgroups of sizes 6, 8, and 12 (it suffices to give generators, but explain why the sizes are 6, 8, or 12).

Handwritten answers, due by Friday 7 November 2025.