Groups of order 6

From Groupprops

This article gives information about, and links to more details on, groups of order 6
See pages on algebraic structures of order 6| See pages on groups of a particular order

Contents

There are, up to isomorphism, two groups of order 6, indicated in the table below:

Group	GAP ID (second part)	Abelian?
symmetric group:S3	1	No
cyclic group:Z6	2	Yes

There are many ways of demonstrating that there are only two groups of order six, including simply looking at the possible multiplication tables. One of the general approaches is via the classification of groups of order a product of two distinct primes. Since $6 = 3 \cdot 2$ and $2 \mid (3 - 1)$, the number 6 falls in the *two isomorphism classes* case in that classification.

Specific information

Information type	For symmetric group:S3	For cyclic group:Z6
element structure	element structure of symmetric group:S3	element structure of cyclic group:Z6
subgroup structure	subgroup structure of symmetric group:S3	subgroup structure of cyclic group:Z6
linear representation theory	linear representation theory of symmetric group:S3	linear representation theory of cyclic group:Z6
endomorphism structure	endomorphism structure of symmetric group:S3	endomorphism structure of cyclic group:Z6

Category: Groups of a particular order
