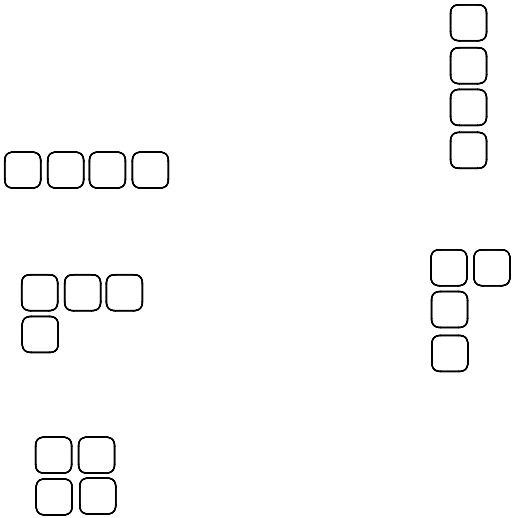


This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on May 19, 2024 7:10:59 PM, was last modified on August 28, 2026 11:30:17 PM, and was exported on September 7, 2026 3:04:01 PM.

S4

irreps



	1+1+1+1	2+1+1	2+2	3+1	4	5 partitions
conjugacy class	i	(1 2)	(1 2)(3 4)	(1 2 3)	(1 2 3 4)	5 classes
size						5!
trivial rep □□□□	1	1	1	1	1	ker = S_5
alternating rep □ □ □ □	1	-1	1	1	-1	ker = A_4
standard = permutation - trivial □□□ □	3	1	-1	0	-1	faithful?
standard ⊗ alternating □□ □ □	3	-1	-1	0	1	faithful?
last rep □□ □□	2	0	2	-1	0	ker = S_3

- **find characters of irreps of S_4 using character identities**
 - First, we write down characters for trivial, alternating and standard
 - Next, by character orthonormality, standard $\otimes$ alternating is also *irreducible*.
 - The last character must be 0 on A_4 because its tensor with alternating is itself.
 - The rest is computed by orthonormality of one class.

Current note has 0 direct children and 0 total descendants.

- [stretchy](#)
 - [Symmetric group](#)
 - S_4

And it has 5 siblings.

- [stretchy](#)
 - [Symmetric group](#)
 - S_3
 - S_4
 - S_5
 - S_n
 - $\lim S_n$