

The number of all transformation
groups on an infinite set*

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Let X be an infinite set, $T(X) = \{f \in X^X: f \text{ is a bijection}\}$, $C = \{G: G \text{ is a transformation group on } X\} = \{G: G \text{ is a subgroup of } T(X)\}$. Then $|C| = 2^{2^{|X|}}$. In proof of this result, the AC is used.

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References

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