Rogers-Ramanujan Bijections

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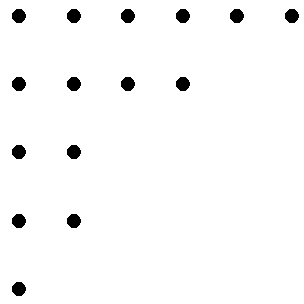
http://www.kic.org.uk/wp-content/uploads/2011/11/UBIC_Logo.jpg

<http://www.kic.org.uk/brighton/>

<http://sro.sussex.ac.uk/view/creators/5315.html>

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**Partitions**



What is a partition?

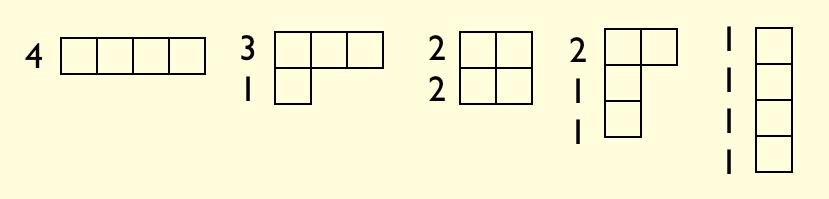
A **partition** is a sequence of numbers that add up to a given number. There are five partitions of:

(So we say )

Note; the sequences are non-increasing.

Ferrers diagram:

rows represent entries

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**source:**<http://mathforum.org/mathimages/index.php/Catalan_Numbers>

is the number of partitions of

Definitions.

For complex ,,,…, and (with );

## Generalized Rogers-Ramanujan Bijections

**By**David M. Bressoud and Doron Zeilberger

[**http://core.ac.uk/display/21075956**](http://core.ac.uk/display/21075956)

The number of partitions of where the difference is greater than ***is equal to*** the number partitions of with each part congruent to mod (i.e. of the form or ). This result was conjectured in 1913 by Srinivasa Ramanujan – it had been proved in 1894 by L. J. Rogers.

**Example**

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As a -series identity:

**()**

The -binomial coefficients:

These generalise binomial coefficients,

Lim***q*->1**

Andis the generating function for partitions

(bounded by having) first part ,

and number of parts

