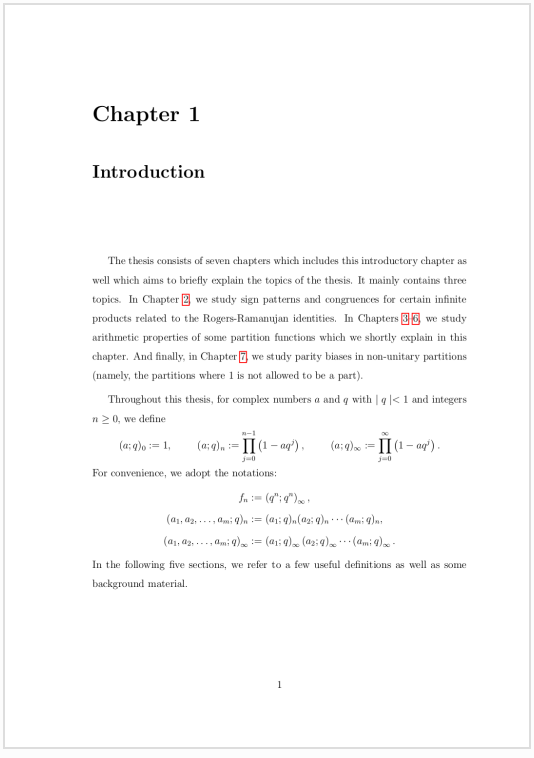
Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	Abhishek Sarma
Assignment title:	PhD
Submission title:	Sign patterns and congruences of certain infinite products inv...
File name:	partition_functions,_and_parity_biases_in_integer_partitions.pdf
File size:	785.87K
Page count:	104
Word count:	26,833
Character count:	102,016
Submission date:	21-May-2025 11:58AM (UTC+0530)
Submission ID:	2681224662



Chapter 1

Introduction

The thesis consists of seven chapters which includes this introductory chapter as well which aims to briefly explain the topics of the thesis. It mainly contains three topics. In Chapter 2, we study sign patterns and congruences for certain infinite products related to the Rogers-Ramanujan identities. In Chapters 3-6, we study arithmetic properties of some partition functions which we shortly explain in this chapter. And finally, in Chapter 7, we study parity biases in non-unitary partitions (namely, the partitions where 1 is not allowed to be a part).

Throughout this thesis, for complex numbers a and q with $|q|<1$ and integers $n \geq 0$, we define

$$(a;q)_0 := 1, \qquad (a;q)_n := \prod_{j=0}^{n-1}(1-aq^j), \qquad (a;q)_\infty := \prod_{j=0}^{\infty}(1-aq^j).$$

For convenience, we adopt the notations:

$$f_n := (q^n;q^n)_\infty,$$
$$(a_1,a_2,\ldots,a_m;q)_n := (a_1;q)_n(a_2;q)_n\cdots(a_m;q)_n,$$
$$(a_1,a_2,\ldots,a_m;q)_\infty := (a_1;q)_\infty(a_2;q)_\infty\cdots(a_m;q)_\infty.$$

In the following five sections, we refer to a few useful definitions as well as some background material.

1

Sign patterns and congruences of certain infinite products involving the Rogers-Ramanujan continued fraction, arithmetic properties of some partition functions, and parity biases in integer partitions

by Abhishek Sarma

Submission date: 21-May-2025 11:58AM (UTC+0530)
Submission ID: 2681224662
File name: partition_functions,_and_parity_biases_in_integer_partitions.pdf (785.87K)
Word count: 26833
Character count: 102016

Sign patterns and congruences of certain infinite products involving the Rogers-Ramanujan continued fraction, arithmetic properties of some partition functions, and parity biases in integer partitions

ORIGINALITY REPORT

7%	3%	6%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Ick Sun Eum, Kyoungmin Kim. "Representations of Bell quinary quadratic forms", The Ramanujan Journal, 2024 Publication	<1%
2	Submitted to National University of Singapore Student Paper	<1%
3	S. Cooper, M.D. Hirschhorn. "Results of Hurwitz type for three squares", Discrete Mathematics, 2004 Publication	<1%
4	Submitted to University of Bristol Student Paper	<1%
5	ris.utwente.nl Internet Source	<1%
6	dr.lib.iastate.edu Internet Source	<1%
7	simonrs.com Internet Source	<1%
8	Paramonov, Dmitry. "Handling Data Too Large to Handle: On Multi-Pass Streaming and Interactive Coding", Princeton University, 2024 Publication	<1%
9	people.cs.clemson.edu	

46	Walker-Jones, David Elliot. "Optimal Attention", University of Toronto (Canada), 2021 Publication	<1%
47	pt.scribd.com Internet Source	<1%
48	pure.sabanciuniv.edu Internet Source	<1%
49	1library.net Internet Source	<1%
50	Young, P.T.. "Degenerate Bernoulli polynomials, generalized factorial sums, and their applications", Journal of Number Theory, 200804 Publication	<1%

Exclude quotes	On	Exclude matches	< 14 words
Exclude bibliography	On		