

King Khalid University



College of Science  
Department of Mathematics



جامعة الملك خالد



كلية العلوم  
قسم الرياضيات

## Report on research activities in the Department of Mathematics Academic Year 1442H (2020-2021)





## 1. Introduction

The scientific research is one of the principal indicators of universities ranking. In this context, King Khalid University has paid a special attention to the research activity in different scientific domains. It provides a support and funding for research groups and research projects for all scientific fields. Motivated by its pivotal role in the technological development and the artificial intelligence, the field of mathematics and its applications has received a great consideration in the recent few years. It constitutes one of the most active research areas in King Khalid university. Furthermore, the faculty members of the mathematics department have distinguish contributions. Moreover, the publication rate in the mathematics department is in continuous progression in the last years. Furthermore, many faculty members of the mathematics department were rewarded by the university. The research activity in the Department of Mathematics is structured in four research groups. Such structure covers the basic branches of mathematics and their applications. More precisely, the four research groups in the Department of Mathematics are: (1) Applied mathematics group, (2) Analysis and geometry group, (3) Algebra and number theory and their applications group and (4) Statistics and probability group . The present report, summarizes the most important research activities in the mathematics department for the academic year 1442H.

## 2. The scientific publication

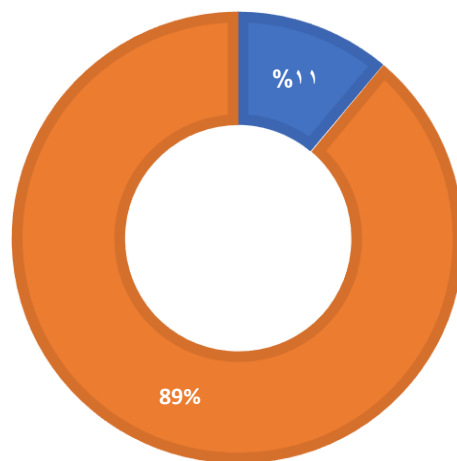


Based on the statistical survey performed by the coordinators of different research groups, in mathematics department, the faculty members of mathematics department have published 326 papers in indexed scientific journals. However, in order to avoid duplication of the joint publications we have used some web search engines to identify these publications. Specifically from Google Scholar and Web of Sciences platforms we identify 62 research papers jointly published by the members of the department of mathematics in King Khalid University. Therefore, our department has realized exactly 262 scientific papers during the academic year 1442H. We point out that the period of this statistical survey is between August 2020 to August 2021. So, to determine the publication rate in our department we divide the number of the scientific publications by the number of active faculty members during the same period. Thus, the publication's rate in department of mathematics of King Khalid University of the academic year 1442H is around 5.76. On the other hand, according to the web of sciences platform, there are 2374 scientific papers published with funding from King Khalid University. Therefore, the proportion of the mathematics department in scientific publication at King Khalid university is 11.12%. Such ratio highlights the importance role of the department of mathematics in the scientific research activities in King Khalid University compared to the other departments. Figure (1) compares the contribution of mathematics department in scientific publishing to the other departments of King Khalid University.



## THE SCIENTIFIC PUBLICATION IN MATHEMATICS DEPARTMENT COMPARED TO OTHER DEPARTMENTS

■ Mathematics departmen  
■ Other departments



Research groups	Number of publications
Applied Mathematics	131
Analysis and geometric	73
Algebra and number theory and their applications	32
Statistics and probability	28
<b>Total</b>	<b>264</b>

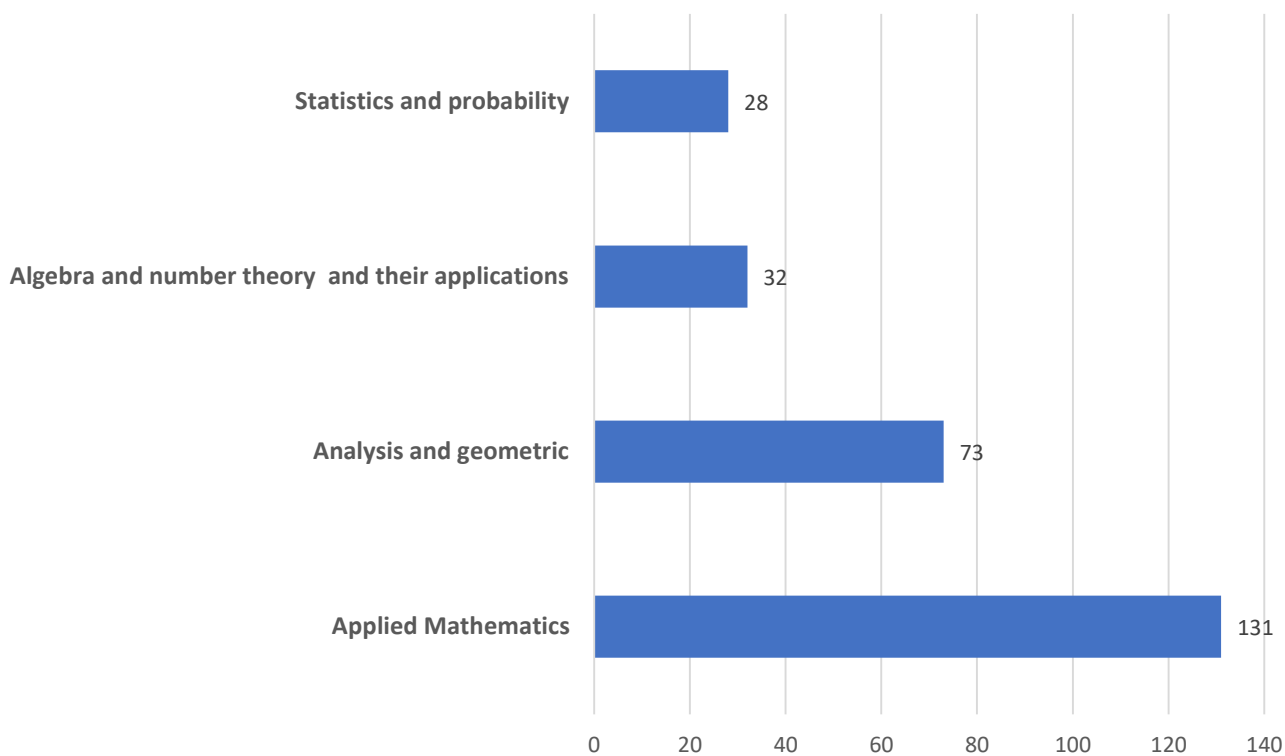
Table(1): Number of publications by research groups

In the Table (1), we present the distribution of the published papers over different research groups. The first group is the Applied Mathematics 's group which is the largest group in terms of number of faculty members. The members of this group have published 131



scientific papers. The second place is occupied by the research group of Analysis and geometric. This last has contributed with 73 scientific papers. The members of Algebra and number theory and their applications group have published 32 scientific papers. The smallest research group according to the number of faculty members is the Statistics and probability group. The member of this group have contributed in the scientific publishing process in the mathematic department by 28 publications. For more readability of this result we display it over the following bar chart.

The distribution of scientific publications by groups





### 3. The citation rate

Undoubtedly, the citation rate is a also indispensable index to examine the quality of the published papers. To quantify this aspect, we have employed the Google Scholar platform. Searching by the unified affiliation for the mathematics that is "**Math department. Dept., King Khalid University, KSA**" we totalize about 6789 citations under the mentioned affiliation. This number increases the citation rate for the mathematics department to 25.71. Compared to the previous academic year 1441H , we observe that there is a small progression of the citation rate. Precisely, the citation rate in the academic year 1441H was 25.63 by papers. So, we can say that there is a progression of 1% by paper.

### 4. Research projects

According to the statistical survey realized by the coordinators of the research groups, we count 19 research projects in the department of mathematics funded by the Deanship of Scientific Research. We point out the Deanship of Scientific Research proposes three types of funding that are: the general program projects, small and large research group projects. In this context, the counted number of research projects in the department covers the three mentioned categories. Once again all the research groups of the department have participated to the achievement of these projects. Table (2) gives the distribution of research projects over the research groups of the department. We can see that the number of realized research projects is distributed equitably over the research groups. Of course this statement take into account the number of faculty members in each research groups. Since the Applied Mathematics group is largest one, the number of research projects realized by this group was 6 projects. It is the first group in term of number of projects. The number of projects achieved by the Analysis and geometric groups was 5 research projects. While the number



of research projects submitted by the Algebra, number theory and its application is 4 projects. The same number was accomplished by the research group of Statistics and Probability.

Research groups	Number of research projects
Applied Mathematics	6
Analysis and geometric	5
Algebra and number theory and their applications	4
Statistics and probability	4
<b>Total</b>	<b>264</b>

Table(2): Number of research projects by research groups

