

1 How to write an abstract.

An abstract is a very short summary of the main results or purpose of a paper. It is normally only a paragraph long. Sometimes there is a sentence or two at the beginning that gives a quick introduction (history and/or background and/or motivation) to the paper topic. After that, the main results or purpose of the paper are shared. For example, this can be done by starting a sentence with “In this paper, we ...”.

The language in an abstract should be very precise and efficient. The reader needs to be able to understand the main topics discussed in the paper. If the reader wants more detail, they then go on to read the introduction. If they want more detail beyond that, they then actually read the rest of the paper. As you go from abstract to introduction to the full paper, the number of readers that read this percentage of your paper decreases. Said another way, your abstract is VERY VERY important, your introduction is VERY important, and the rest of the paper is important. In the corporate world, the CEO might read up through the abstract, your boss might read up the introduction, and your colleagues might read the entire paper.

It is customary to first do your literature research, then focus on writing up your content sections, then write up your introduction, then write your abstract. You don't want to write your abstract or your introduction first because you may not know what the main points of your paper are until you figure out the mathematics you would like to write about.

Unlike the rest of the paper, abstracts should NOT contain citations.

What are some things that should be part of an abstract? What are some things that should not be part of an abstract

2 Sample Abstracts Activity

Read each of the following sample abstracts and write some comments about each one. Think about how well each sample abstract addresses the requirements listed in Section 1.

2.1 Sample Abstract (algebraic and transcendental numbers)

Abstract

Every rational number can be categorized as one of two types: algebraic or transcendental. This paper will discuss properties of these two types as well as attempt to categorize two famous constants, e and π . We will then apply our results to answer a classic question in geometry.

Comments about the sample abstract

2.2 Sample Abstract (game of Hex)

Abstract

The game of Hex has been a popular subject of study since John Nash first began studying it in the 1940's. Since then, numerous variations of the game of Hex have been created. Misère Hex, or Reverse Hex, is a variation of the game of Hex where the goal of the game is to lose. In this paper, we determine that player 1 in Reverse Hex has a winning strategy if the board has even dimensions, and player 2 has a winning strategy if the board has odd dimensions. We will also briefly discuss two other variations of the game of Hex, Vex and Y, and how their properties are similar to those of Hex and Reverse Hex.

Comments about the sample abstract

2.3 Sample Abstract (Similarities between integers and polynomials)

Abstract

There are many analogies between the integers and polynomials. In this paper, we will prove several results in the integers and provide their analogous statements for polynomials. The topics we will cover include the Division Algorithm and the Euclidean Algorithm as well as how to construct fields using integers and polynomials. We will also discuss some algebraic properties of both structures.

Comments about the sample abstract

2.4 Sample Abstract (Pick's Theorem)

Abstract

In 1899, Georg Pick discovered a formula for the area of lattice polygons. After examining the general background of this formula and proving it, we will explore the extensions and versions of Pick's theorem to more complicated regions in the plane and polytopes in higher dimensions. We will also discuss some relations between Pick's theorem and Euler's theorem as well as Farey sequences for a more thorough understanding of this theorem.

Comments about the sample abstract

3 Write your abstract

Write a draft of the abstract for your paper. Before you submit the final version of your paper, you can ask to meet with me online or the writing tutors online at <https://writingcenter.uconn.edu/>.