

# BINET'S FORMULA FOR FIBONACCI NUMBERS

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## ABSTRACT

The Fibonacci sequence is one of the most well known integer sequences. Binet's formula provides a closed form expression for a general term in the Fibonacci sequence. There are many ways to derive Binet's formula. In this class, we will look at five of them. These methods were chosen either for their beauty, or to showcase the utility of really interesting pieces of mathematics. Some of the methods involve linear algebra and calculus and while I will try to make each method as accessible as possible, a basic understanding of linear algebra and calculus would be useful in understanding these methods.