JOURNAL 3

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1. What I did?

Properties - if you cut off a square section whose side is equal to the shortest side, the piece that remains is also a golden rectangle.

We tried different golden rectangle for this. Since the length of the rectangle is $(golden\ ratio) * (the\ width\ of\ the\ rectangle)$. And the square section is $(width\ of\ the\ rectangle)^2$. Then we get another golden rectangle when we cut off the square section. From this process lead us to Golden Spiral.

e.g. Given a Golden rectangle with 2m length. we can find the length is $(2m) * (1.618) = 3.236m$. And we cut of the square which is $2m * 2m$. Then we get another rectangle with length equal to the width of the original rectangle and the width is $(3.236m) - 2m = 1.236m$. To check if the new rectangle we have is a golden rectangle; we check it by the golden ratio: $\dfrac{2m}{1.236m} = 1.618$. Then we keep cutting it to get smaller rectangle.

The Fibonacci sequence is similar to the Golden rectangle. The different is that we start with a small squares. In order to get the diagram as the Golden rectangle. We put two same small square together to get an rectangle and keep adding the bigger square which is the length of the previous rectangle. Eventually we will get the similar rectangle as the Golden rectangle as the figures illustrate below.

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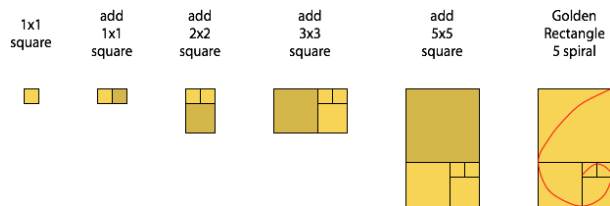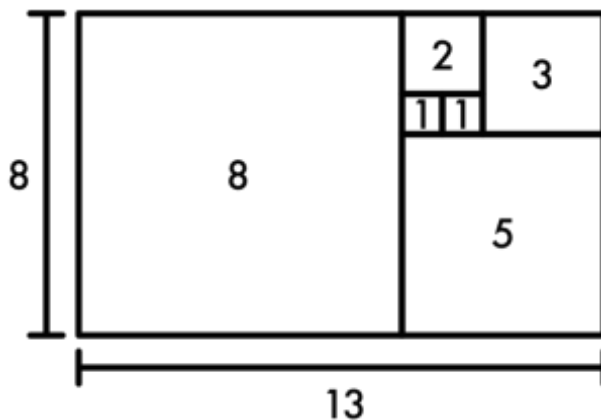
2. WHY I DID IT?

I want to look deeper into the relation between the Fibonacci sequence and the Golden rectangle since the Golden ratio is related to the Fibonacci sequence.

3. WHAT OBSTACLES I ENCOUNTERED AND MY RESEARCH PLAN FOR THE FOLLOWING WEEK?

I'm not sure is the example of cutting the golden rectangle is clear enough for others to understand the relation between the Fibonacci square and the golden rectangle. I'm going to start on organizing all the definitions and properties so far to prepare out introduction.

REFERENCES

[1] Designing An Attorney Website http://university.lawlytics.com/lessons/page-layouts
[2] Fibonacci Number Patterns http://gofiguremath.org/natures-favorite-math/fibonacci-numbers/fibonacci-number-patterns/