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# Measuring the Immeasurable: Calculating the Volume of Noah's Ark Using Integrals Can Reveal the Clarity and Sufficiency of the Bible.

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## Abstract

Mathematics is known as a science that always uses concepts and calculations. Under the pretext that mathematics is just calculations, of course, there is a possibility that there will be a response about mathematics that has nothing to do with the story in the Bible. In fact, based on previous research, it has been stated that one of the two qualities of the Bible is Clear and Sufficient. Considering these two properties, this study aims to prove that the Calculation of the Volume of Noah's Ark using Integral can Reveal the Clarity and Adequacy of the Bible. The research method used is a descriptive research method based on biblical statements that are calculated using integrals. The final result of this study states that the Calculation of the Volume of Noah's Ark using Integral can indeed reveal the Clarity and Sufficiency of the Bible as a form of immeasurable measurement. The meaning is: 1) The clarity of the Bible regarding the Volume of Noah's Ark using Integral can be interpreted and understood with the help of the Holy Spirit. 2) The sufficiency of the Bible regarding the Volume of Noah's Ark using Integral can be interpreted and used as a guideline for every believer's life.

**Keywords:** Biblical Clarity, Biblical Adequacy, Noah's Ark Volume using Integral, Noah's Ark, Integral

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## 1. Introduction

Mathematics is known as a science that always uses concepts and calculations. Of course, this statement cannot be refuted or ignored. This commonplace statement clearly shows how people respond to mathematics based on experience from real applications of mathematics that are certainly common. Starting from studying at school at the early level, middle school and even college to daily life, mathematics always appears as a concept of counting. Based on these excuses and experiences, of course, it is not uncommon to assume that mathematics has nothing to do with the story in the Bible. Interestingly, in Ricky Donald Montang's research (2024) stated that one of the two properties of the Bible is Biblical Clarity and Biblical Adequacy.

So, several questions arise, such as: (1) What is Bible Clarity? (2) What is Bible Sufficiency? (3) What does the relationship between these two Bible properties and mathematics? (4) Why and how can these two biblical properties be associated and even reveal one of the biblical stories about "Noah's Ark" into mathematical calculations, especially integrals? This study aims to prove that the Calculation of the Volume of Noah's Ark using Integral can Reveal the Clarity and



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Sufficiency of the Bible. This is intended because when doing calculations and math in Bible stories, it will certainly give a stigma of immeasurable measurement. That is, measurement after mathematics still cannot limit His truth. However, of course, it is necessary to understand the definitions of the related things above first.

#### **A. Biblical clarity can be interpreted and understood with the help of the Holy Spirit.**

Explicitly, of course, it can be understood that the nature of Biblical Clarity states that the Bible is clear. Every word, sentence and Word contained in the Bible has a clear meaning and there is no ambiguity. However, it does not mean that it can be immediately understood in one reading. There is a saying that every time we read the Bible in His miraculous way, God will reveal new meanings and understandings. Thus, every time we read God's Word in the Bible, of course, a new and new understanding will always be revealed. This statement has proved to be true and is sufficient to state the definition of Biblical Clarity itself. The Clarity of the Bible states that the writing in the Bible is clearly intended so that when reading the Bible, each person will seek God's help, be willing to do God's Word and be the absolute determinant of belief in Christ so that after reading the Clarity of the Bible, his faith can grow and become wiser, especially in making decisions (Montang, 2024). Biblical clarity also means not eliminating parts of the Bible text that are difficult to understand, but rather emphasizing that every believer should hold his or her life accountable before God (Winarjo, 2022).

#### **B. The sufficiency of the Bible can be interpreted and used as a guideline for every believer's life.**

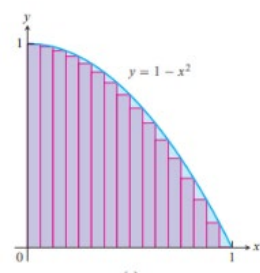
Explicitly, of course, it can be understood that the Sufficiency of the Bible states that the Bible is sufficient to explain everything. Every word, sentence and Word contained in the Bible has enough meaning and does not need to be added or subtracted. However, it does not mean that it can be immediately understood in one reading. However, there is one thing that is only in the Bible and cannot be obtained anywhere else: salvation. Therefore, the Bible is sufficient to provide a guideline for life regarding salvation in the Father. His Word clearly and adequately states that "salvation is in no one but in Him" (Acts 4:12). Thus, the sufficiency of the Bible states that the writings of the Bible are the most complete source of truth and can always be relied upon in any situation, anytime and anywhere, which is why the sufficiency of the Bible is able to guide and guide the life of every believer (Montang, 2024). This sufficiency of the Bible also emphasizes that every Word of God has begun to be fulfilled and will continue to be fulfilled until the second coming of Jesus (Winarjo, 2022).

#### **C. Integral**

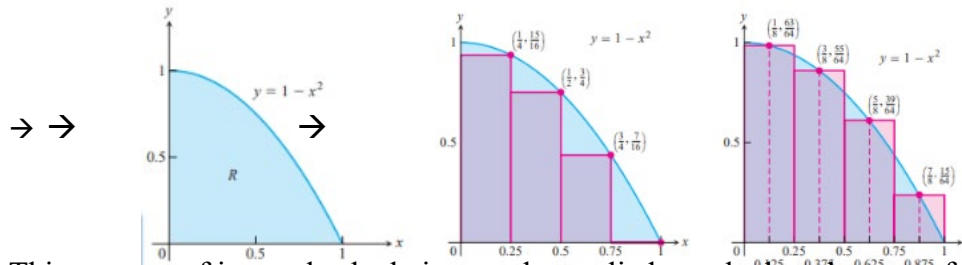
Integral is the concept of repeated summation calculation of a set of regularly cut pieces from an irregular boundary field or area. The concept of calculation on integral uses the concept of integration where different components (pieces) (their sizes) can still be calculated effectively and consistently. Generally, integral calculations are always made after an irregular area is



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made into rectangular pieces that later become the size of the irregular area.



This concept of integral calculation can be applied to calculate the area of irregular areas and the volume of an object. The calculation can also be done using two methods, namely finite integral and infinite integral.

$$\text{Finite integral} = \int_a^b f(x) dx$$

$$\text{Infinite integral} = \int f(x) dx$$

How to read it:

- Finite integral : Integral  $f(x)$  from  $a$  to  $b$
- Infinite integral : The integral of  $f(x)$

#### D. Noah's Ark

Based on Genesis 6, Noah was a person who received grace in God's eyes because at that time, God saw the great evil of man on earth and all the tendencies of his heart always produced mere evil, so God regretted making man because man broke God's heart. Finally, God decided to end the life of all creatures on earth with the flood. Therefore, Noah was commanded by God to make an ark and it must be filled with one pair of every animal on earth. Noah also made the ark according to God's Word and did all that God commanded faithfully so that God saved Noah and his family along with every pair of animals on earth.

#### 2. Methods

Departing from the author's curiosity about whether there is a mathematical concept that can reveal the story of the Bible, the author was intrigued to study more deeply about one of the Bible stories, namely "Noah's Ark". The Bible clearly records that the story of Noah's Ark has a volume that can be counted. Assuming that the calculation can be made, the thing that needs to be considered and known according to the following verse (Genesis 6:14-16 (NKJV)) is: <sup>14</sup> Make yourself an ark of gopherwood; make rooms in the ark, and cover it inside and outside with pitch. <sup>15</sup> And this is how you shall make it: The length of the ark shall be three hundred cubits, its width fifty cubits, and its height thirty cubits. <sup>16</sup> You shall make a window for the ark, and you shall finish it to a cubit from above; and set the door of the ark in its side. You shall make it with lower, second, and third decks.

Based on the verse from Genesis 6: 14 – 16 above, the things that need to be considered for the calculation are length = 300 cubits, width = 50 cubits, height = 30 cubits and 1 cubit = 45 cm. Thus,



the shape of Noah's Ark can be assumed to be a simple rectangular prism because it is not used for sailing and it can also be assumed that the base is in the shape of a parabola, so the volume calculation needs to be integral. Thus, if Noah's ark is assumed to be a simple rectangular prism, then the calculation will be very simple.

**Volume of Noah's Ark in the shape of a Block (Rectangular Prism)**

$$\begin{aligned} \text{Volume} &= p \times l \times t \\ &= 300 \text{ hasta} \times 50 \text{ hasta} \times 30 \text{ hasta} = 450.000 \text{ hasta}^3 \end{aligned}$$

However, in verse 16 it is said about the hull of the ark, so the shape of Noah's Ark can be assumed to be the shape of a wake, whose base is in the shape of a parabola. Thus, the calculation will use the integral with the parabolic equation. The parabolic equation is with the height of the ark as the y-axis and the width of the ark as the x-axis. Therefore, it has been found that . Of course, with the initial width of the ark, which is 50 cubits, it is divided in half symmetrically into 25 cubits. Using equations  $y = a x^2$   $y = \text{tinggi} = 30 \text{ hasta}$  dan  $x = \text{lebar} = \pm 25 \text{ hasta}$   $\pm y = a x^2 \rightarrow 30 \text{ hasta} = a (25 \text{ hasta})^2$

$$a = \frac{30 \text{ hasta}}{25^2 \text{ hasta}} = \frac{30}{625} = 0.048$$

**Using the above equation, the Volume of Noah's Ark using Integral is:**

$$\begin{aligned} \text{Volume} &= l \times (w \times h) \\ &= \text{length} \left( \int_{-x}^x y \, dx \right) \\ &= \text{length of Noah's ark} \int_{-\text{width}}^{\text{width}} \text{height} \, d(\text{width}) \\ &= 300 \text{ hasta} \int_{-25 \text{ hasta}}^{25 \text{ hasta}} (0.048x^2) \, dx \\ &= 300 (0,048) \left[ \frac{1}{3} x^3 \right]_{-25}^{25} \\ &= 300 (0,048) \left[ \frac{25^3}{3} - \frac{(-25)^3}{3} \right] \\ &= 300 (0,048) \left[ \frac{2(25^3)}{3} \right] \\ &= 300 (0,048) (10,416.67) \\ \text{Volume} &= 150.000 \text{ hasta}^3 \end{aligned}$$

Thus, if it is assumed that it is back in the form of cubic meters, then  $1 \text{ hasta}^3 = (0,45)^3 \text{ m}^3 = 0,091125 \text{ m}^3$ . So that the volume of Noah's Ark in the form of a satellite dish is  $150.000 \text{ hasta}^3 = 150.000 (0,091125) \text{ m}^3 = 13.668,75 \text{ m}^3$ . Based on these calculations, the size of Noah's Ark in the shape of a satellite dish is equivalent to the  $5 \frac{1}{2}$  times of volume an Olympic swimming pool or equivalent to 7-8 school with each building have second floor (15m x30m x4m).

**3. Result and Discussion**

Based on the above calculations, it has been found:

- The volume of Noah's Ark in the shape of a Block (Rectangular Prism) is  $450.000 \text{ hasta}^3$



- The volume of Noah's Ark in the shape of a Parabola is 150.000 *hasta*<sup>3</sup>
- The volume of Noah's Ark in the shape of a Parabola is calculated using Integral and is equivalent to the  $5\frac{1}{2}$  times of volume an Olympic swimming pool or equivalent to 7-8 school buildings with each buildings have second floor (15m x 30m x 4m).

So, based on the results of the above calculations, the goal of proving that the Calculation of the Volume of Noah's Ark using the Integral can Reveal the Clarity and Sufficiency of the Bible can be achieved. The point is that all of the calculations have indeed been proven to be measurable, but in fact, when calculating, the assumption of the shape of Noah's ark is still found.

This means that the size of Noah's ark is only an "indicator" of the formation of the ark. It is the same with the ark which is a real and measurable symbol of salvation, but it still cannot be really understood because its shape is not explained in detail. Our lives are the same. Our lives cannot truly understand the greatness of God's love even though we are truly obedient, faithful and have faith in God. The length, breadth and height of God's love cannot really be limited because in fact His love is given to all people throughout the world regardless of feathers. For example, Allah still gives sunshine to whoever the human being is and wherever he is. The calculation of the volume of Noah's ark using the integral has also been clearly and sufficiently stated because there is no need for addition or subtraction from God's Word, in fact, the meaning of the calculation can only be understood after receiving the guidance of the Holy Spirit and of course also understood as a guideline for every believer's life. Thus, it is evident and evident that Noah's calculation of the volume of the ark using integral is only a small part of His way of showing the depth and greatness of His love for man.

#### 4. Conclusion

##### 1. Conclusion

Although the size of Noah's ark is known, it is still not possible to measure the depth and greatness of His love for man. This proves that Noah's calculation of the volume of the ark using integrals is clear and sufficient to reveal His truth. There is no need for additions or subtractions in understanding His truth because everything is revealed by the Holy Spirit. It has been revealed that Noah's ark exists as a symbol of human salvation and that obedience, faithfulness and faith growth remain only indicators of understanding and growing in Him.

##### 2. Suggestion

Although the calculation is done mathematically, do not doubt the Clarity and Sufficiency of the Bible because His revelation was given directly by the Holy Spirit to be a guide to life for believers. So, keep asking God for help so that every time you read God's Word, every believer always gets new wisdom and understanding from God's Word that is read and pondered to be done immediately.



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