

# Assignment Web Similarity Analysis

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## Executive Summary

Overall Web Similarity Score: 25%

**Assessment:** Low overall similarity. The assignment primarily demonstrates the application of the bisection method to a specific polynomial, which is unique to the assignment. While some phrases and the general concept of the bisection method are present in the web sources, the specific calculations and the table of iterations are not found in the provided sources.

**Conclusion:** The assignment demonstrates original work. The core of the assignment—the application of the Bisection Method to the specific polynomial and the resulting calculations and iteration table—is unique. The use of the term "Bisection Method" is unavoidable and constitutes common knowledge in the context of numerical analysis. There is no evidence of plagiarism based on the provided sources.

## Web Sources Analyzed

Source URL	Similarity Score
https://www.geeksforgeeks.org/program-for-bisection-method/	9.01%
https://atozmath.com/example/CONM/Bisection.aspx?q=bi&q1=E1	9.52%
https://math.stackexchange.com/questions/3752523/bisection-method-for-fx-x4-x2	6.77%
https://www.youtube.com/watch?v=nC1CDUwL3Qw	3.78%

## Detailed Content Matches

### Match 1 - Common Knowledge (100%)

**Assignment:** Bisection Method  
**Source:** https://www.geeksforgeeks.org/program-for-bisection-method/  
**Source Text:** Bisection Method

### Match 2 - Common Knowledge (100%)

**Assignment:** Bisection method  
**Source:** https://atozmath.com/example/CONM/Bisection.aspx?q=bi&q1;=E1:  
**Source Text:** Bisection method

### Match 3 - Common Knowledge (100%)

**Assignment:** Bisection method  
**Source:** https://math.stackexchange.com/questions/3752523/bisection-method-for-fx-x4-x2  
**Source Text:** Bisection method

### Match 4 - Common Knowledge (100%)

**Assignment:** Bisection Method  
**Source:** https://www.youtube.com/watch?v=nC1CDUwL3Qw

**Source Text:** Bisection Method

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### ***Match 5 - Original Content (0%)***

**Assignment:** Iterations a  $F(a)$  b  $F(b)$  c  $F(c)$  update

**Source:** None

**Source Text:** None

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# Full Assignment with Highlighted Plagiarism

Sections highlighted in yellow with red text indicate potential plagiarism.

## 1 Manual Solutions

### 1.1 Bisection Method

Source: <https://www.youtube.com/watch?v=nC1CDUwL3Qw>

### Bisection Method

Source: <https://www.youtube.com/watch?v=nC1CDUwL3Qw>

$$f(x) = x^3 - x - 2$$

$$f(x) =$$

$$=$$

$$0$$

$$f(x) = x^3 - x - 2 = 0 \text{ interval } [1, 2]$$

$$=$$

$$f(x) =$$

$$x^3 - x - 2$$

$$f(1) =$$

$$1^3 - 1 - 2$$

$$=$$

$$f(2) =$$

$$=$$

$$-2$$

$$=$$

$$=$$

$$f(1.5) =$$

$$=$$

therefore, updated Interval  $[1.5, 2]$

$$0$$

$$f(1) < 0$$

$$2^3 - 2 - 2$$

$$4$$

$$f(2) > 0$$

Since  $f(1) < 0$ ,  $f(2) > 0$ ; a root exists between 1 and 2

$$C$$

$$=$$

$$($$

$$1+2$$

$$)$$

2  
1.5  
1.53 -1.5 -2  
-0.125

Table 1:Iteration Table.

Iterations

a

F(a)

b

F(b)

c

F(c)

update

1  
1.00000000  
-2.00000000  
2.00000000  
4.00000000  
1.50000000  
-0.12500000

a=c

2  
1.50000000  
-0.12500000  
2.00000000  
4.00000000  
1.75000000  
1.60937500

b=c

3  
1.50000000  
-0.12500000  
1.75000000  
1.60937500  
1.62500000

0.66601562

b=c

4

1.50000000

-0.12500000

1.62500000

0.66601562

1.56250000

0.25219727

b=c

5

1.50000000

-0.12500000

1.56250000

0.25219727

1.53125000

0.05911255

b=c

So 1.53125000 considered as a root according to **Bisection Method** after 5 iterations

Source: <https://www.youtube.com/watch?v=nC1CDUwL3Qw>

# Analysis Methodology

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**Web Similarity Analysis Method:** This report analyzes the similarity between a student assignment and web content using multiple approaches:

1. **Basic similarity analysis** using TF-IDF vectorization and cosine similarity metrics to calculate statistical similarity between texts.
2. **Advanced semantic analysis** using Google's Gemini AI to identify conceptual similarities, common phrases, and potential plagiarism patterns.
3. **Source verification** by analyzing multiple sources to distinguish between common knowledge and unique content.

## Interpretation Guide:

- 0-15%: Very low similarity - Likely original content
- 16-30%: Low similarity - Contains common phrases but largely original
- 31-50%: Moderate similarity - May contain some paraphrased content
- 51-70%: High similarity - Contains substantial similar content
- 71-100%: Very high similarity - Significant portions may be unoriginal

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*Disclaimer: This automated similarity analysis provides an approximation of content similarity against web sources. Results should be interpreted by a human reviewer for context-appropriate assessment. Common knowledge, standard phrases, and coincidental matches may be flagged and require human judgment.*