

Homework 1

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Abstract

This is a template for homework assignments. Replace this abstract with a brief summary of your work or remove it entirely if not needed.

1 Problem 1

State the problem here.

1.1 Solution

Provide your solution here.

Theorem 1. *State any theorems you prove.*

Proof. Provide your proof here. □

1.2 Code Implementation

You can use either minted or listings for code blocks:

1.2.1 Using minted (requires pygments)

```
1 def example_function():
2     """
3     Example function for demonstration.
4     """
5     return "Hello, World!"
```

1.2.2 Using listings

Listing 1: Example Python Code

```
1 def example_function():
2     """
3     Example function for demonstration.
4     """
5     return "Hello, World!"
```

2 Problem 2

State the next problem here.

2.1 Mathematical Equations

You can include inline math like $f(x) = x^2$ or display math:

$$\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}$$

2.2 Figures

Figure 1: Caption for your figure

2.3 Tables

Column 1	Column 2	Column 3
Data 1	Data 2	Data 3
Data 4	Data 5	Data 6

Table 1: Example table

3 Problem 3

3.1 Algorithms

Algorithm 1 Example Algorithm

1: **procedure** EXAMPLEALGORITHM(*input*)

2: *result* \leftarrow 0

3: **for** $i \leftarrow 1$ to n **do**

4: *result* \leftarrow *result* + i

5: **end for**

6: **return** *result*

7: **end procedure**

4 Conclusion

Summarize your work here.

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