

CAB203 Discrete Structures

Lecture Notes

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1 What is Mathematics?

1.1 What is Mathematics?

1.1.1 Abstraction

Abstraction can be used to simplify a problem by ignoring all the information that is not needed. They capture the relevant properties of a situation, and the relationships between them. Those properties can then be used to work out the solution.

- You have x apples
- You have y friends
- Are there enough apples for all your friends?

By abstracting away irrelevant properties such as size, shape, colour etc. the problem can be simplified to:

$$x \geq y?$$

Limitations of abstraction include:

- Not enough information
- Too much information
- Incorrect information

1.2 Modular Arithmetic

1.3 Exponents and Logarithms

2 Data Representation