CIS220 Discrete Mathematics

Topics of Problems to be covered.

Sections:

Graphical user interface, text, application

Description automatically generated

You must know the definitions, the symbols, how read the math and demonstrate an ability to solve the problems from the book.

Definitions

What is Discrete Mathematics?

Can you write in set or Roster notation?

Explain what each section of the text book above in the graphic is about and how each is used to solve problems.

What cardinality?

What is subset?

What is the difference between a power set and a proper set?

What is bijective function?

What are the 2 types of combination and permutation?

Concepts

What is a combinational proof?

Please provide and example?

What is a Bionomial Coeffiecent?

What is amain theme in this effort?

What is bit string?

What is Pascal’s Triangle?

What are Additive and Multiplicative Principles?

What is Cardinatily of a Union?

**Problems**

Explain Example 1.4.3. in Combinational proofs

Example 11,22

1.1.5

1.1.6

Explain Example 1.4.6. in Combinatioral proofs

Exerciese 1 explain the solution in detail

Explain Example 1.3.5. in Cominations and Permuations

Exercie 1 in COmbiantion and permautions

Excise 3

Exercise #8 in Binomial Coffeients

Exercise # 3 &4..

Mulitaticapl e and Additice prainelcpe

Exercise problems 1-7

Functions

(extra credit: what is recursive function) 10 pts, explain with 2 youtube videos as reference)

All of examples aand exercises 1-13

Sets

Exercises 1-16

Please explain what are these symbols:

|  |
| --- |
| { } |
| A ∪ B |
| A ∩ B |
| A ⊆ B |
| A ⊂ B |
|  |
| A ⊄ B |  |
| A ⊇ B |  |
| A ⊃ B |  |
| A ⊅ B |  |
| Ac |  |
|  |
|  |
| A − B |  |
|  |  |
| *a* ∈ A |  |
| *b* ∉ A |  |
| Ø |  |
| set universal   |  | | --- | |  | | |  |
|  |
|  |  |
| **P**(A) |  |
| A = B |  |
| A×B |  |
|  |
| |A| |  |
| | |  |
| : |  |
| ∀ |  |
|  |
|  |
| ∃ |  |
|  |
|  |
| ∴ |  |

Please complete problems 1-10:

Here:

<https://www.mathsisfun.com/sets/venn-diagrams.html>

All, presently this is due by midnight of 12, another night may be allowed if requested.

Thanks,

Dr. Branch