Homework Cover page. Must be Completed, Signed and Added to the Front of Your Submittal

CS 2200

Discrete Structures and Their Algorithms

Fall 2023

Homework # __1___

Last Name (print) Schmitz

First Name (print) Josiah

Due Date: **Thursday, Sept. 7th at 11:59pm**

I certify that the work attached is the result of my own study efforts. I understand that I may discuss problems with others, but this document was not copied or obtained from online or other non-approved sources.

Josiah Schmitz

(Student Signature)

Homework Policy

Always explain your answers. This is an important part of every HW assignment. Late homework has a 20% penalty and homework turned later than 11:59 pm the day it is due will have a late penalty. A turn in later than one day will receive a grade of zero. HW solutions obtained from other students or online is considered a violation of academic integrity. Ask the Instructor if you have academic integrity concerns about the solutions you are turning in.

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CS 2200
HW 01
Fall 2023

Points: **5 points**

Reference: **Epp5 Sections 1.1, 1.2, and 1.3**

Textbook Problems: Notation: Chapter.Section.Problem / Page

1. Epp5 problem 1.2.9 c, d, e, g / p14.
2. Epp5 problem 1.2.12 / p15.
3. Epp5 problem 1.2.14 / p15.
4. Epp5 problem 1.3.6 a, b, also **draw the arrow diagram** / p22.
5. Epp5 problem 1.3.15 c, d, e / p23.

Schmitz, Josiah

Prof. Seleem

CS 2200

7 September 2023

Homework #1

1.2.9 c. No

d. Yes

e. Yes

g. Yes

1.2.12 a. {(2, 1), (2, 3), (2, 5), (4, 1), (4, 3), (4, 5), (6, 1), (6, 3), (6, 5)} 9 elements

b. {(1, 2), (1, 4), (1, 6), (3, 2), (3, 4), (3, 6), (5, 2), (5, 4), (5, 6)} 9 elements

c. {(2, 2), (2, 4), (2, 6), (4, 2), (4, 4), (4, 6), (6, 2), (6, 4), (6, 6)} 9 elements

d. {(1, 1), (1, 3), (1, 5), (3, 1), (3, 3), (3, 5), (5, 1), (5, 3), (5, 5)} 9 elements

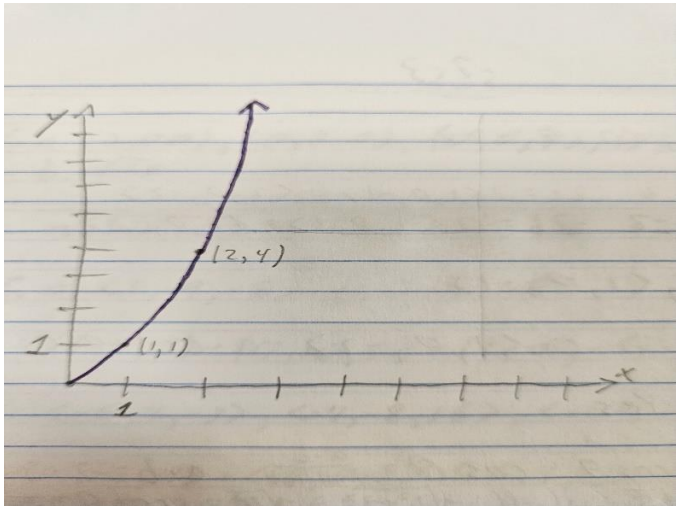
S X T = (x, p) (x, q) (x, r) (y, p) (y, q), (y, r) R X T = (a, x) (a, y)

1.2.14 a. {(a, (x, p)), (a, (x, q)), (a, (x, r)), (a, (y, p)), (a, (y, q)), (a, (y, r))}

b. {((a, x), p), ((a, y), p), ((a, x), q), ((a, y), q), ((a, x), r), ((a, y), r)}

c. {(a, x, p), (a, x, q), (a, x, r), (a, y, p), (a, y, q), (a, y, r)}

1.3.6 a. Yes. No. Yes.

b. 

1.3.15 Arrow diagram d is the only function.