

Gabarito da 2ª Lista de Exercícios – Matemática Discreta II – C02G/C02N

1)

a. $T(n) = 5n$

b. $T(n) = n^2$

2)

a. $\begin{cases} T(1) = 1000 \\ T(n) = 10 \cdot T(n-1), n > 1 \end{cases}$

b. $T(n) = 10^{n+2}$

c. $T(21) = 10^{23}$

3)

$\begin{cases} C(1) = 0 \\ C(n) = n + C(n-1), n > 1 \end{cases}$

$C(n) = \frac{n^2+n-2}{2}$.

4)

a. $\{(0,0), (1,1), (2,2), (3,3)\}$.

b. $\{(4,0), (1,3), (3,1), (2,2)\}$

c. $\{(4,0), (4,1), (4,2), (4,3), (3,0), (3,1), (3,2), (2,0), (2,1), (1,0)\}$

d. $\{(1,1), (1,2), (1,3), (2,2), (3,3)\}$

e. $\{(1,1), (1,2), (2,1), (1,3), (3,1), (4,1), (2,3), (3,2), (4,3)\}$

f. $\{(1,2), (2,1), (2,2)\}$

5)

Item	Reflexiva	Simétrica	Transitiva
a.	Não	Não	Sim
b.	Sim	Sim	Sim
c.	Sim	Sim	Sim
d.	Sim	Sim	Não

6)

a. É reflexiva, simétrica e transitiva.

b. $\begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 & 0 & 0 & 1 \end{bmatrix}$

c.

