

Discrete Mathematics (28.12.2018)

... a simple undirected complete and connected graph using 4 nodes. Draw all possible trees in the graph that you have established. (30 pts).

2. Solve the following recurrence relations :

i) $2a_n = -a_{n-1} + 2a_{n-2} - a_{n-3}$ with $a_0 = 0$, $a_1 = 1$ and $a_2 = 2$ (20 pts).

ii) $a_n = 2a_{n-1} - 2a_{n-2}$ with $a_0 = 1$ and $a_1 = 2$ (30 pts).

3. Simplify the following Boolean expressions :

i) $abc + abc' + a'b$ (10 pts).

ii) $(a + b' + a'b')(c'd' + cd) + (ac)'$ (10 pts).

Duration : 75 minutes.