

Nó Arango

11S816

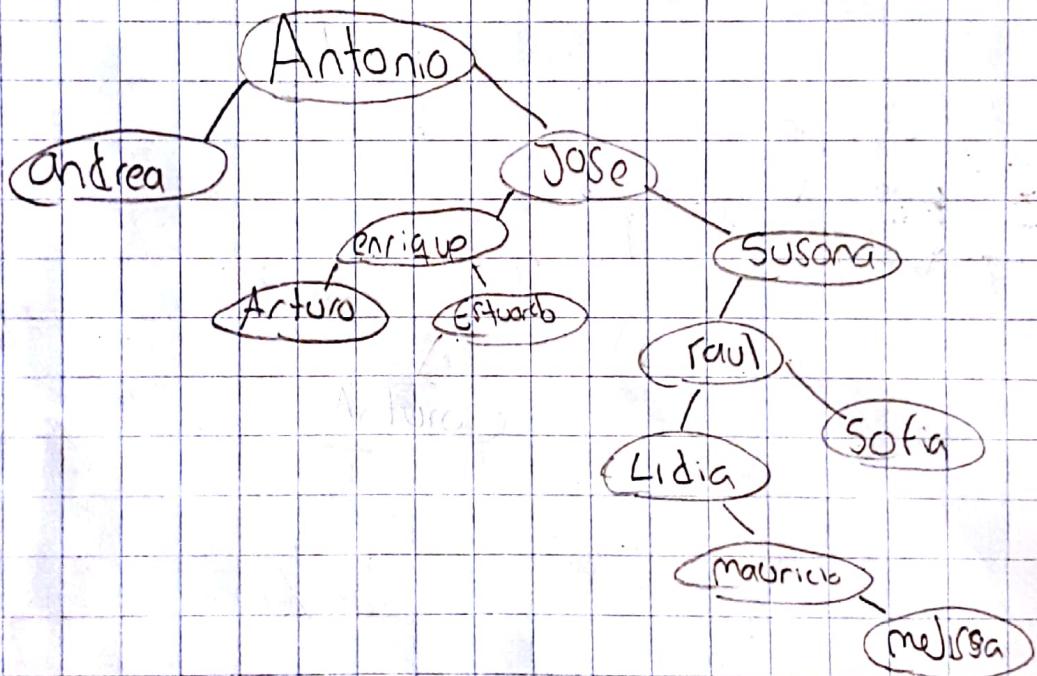
Hoja de trabajo

Arboles binarios

Abb Nombres . Serie I

Antonio, Andrea, José, Susana, Raúl, Lidia,
Enrique, Sofía, Mauricio, Estuardo, Melissa, Arturo

a.)



b.)

- Camino Estudiante 6: Antonio - José - Susana - Raúl - Lidia
- Camino Estudiante 1: Antonio
- Camino Estudiante 5: Antonio - José - Susana - Raúl
- Camino Estudiante 12: Antonio - José - Enrique - Arturo
- Camino Estudiante 3: Antonio - José

Serie II

Pre

In

Post

Raiz Iz der

Iz Raiz dere

RZ - dere - post

a) Pre Orden

: Antonio - Andrea - Jose - Enrique - Arturo - Estuardo
- Susana - Raul - Lidia - Mauricio - Melania - Sofia

b) In Orden

: Andrea - Antonio - Arturo - Enrique - Estuardo - Jose
- Lidia - mauricio - Melania - Raul - Sofia - Susana

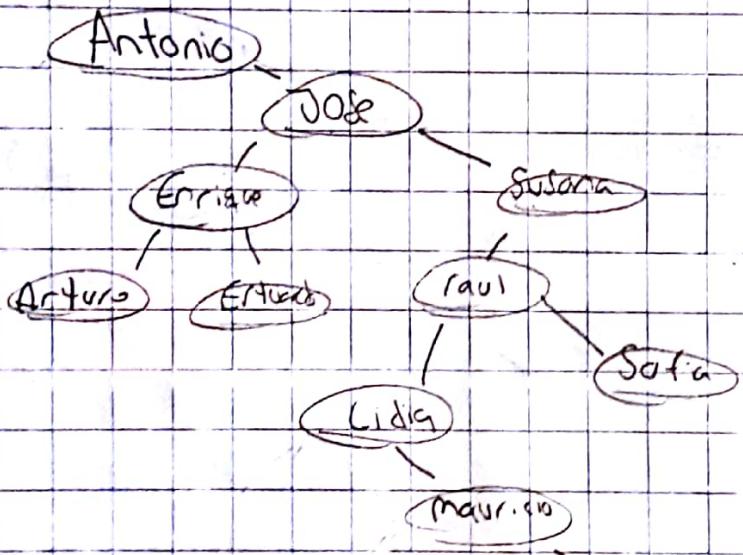
c) Post Orden

: Andrea - Arturo - estuardo - Enrique - Melania - mauricio
- Lidia - Sofia - raul - susana - Jose - Antonio

Serie III

a) Eliminar

Andrea



b) Pre Orden

Antonio - Jose - Enrique

- Arturo - Estuardo - Susana - Raul - Lidia - mauricio - Melania - Sofia

In Orden

Antonio - Arturo - Enrique - Estuardo - Jose - Mauricio -

Melania - Lidia - Raul - Sofia - Susana

Post Orden

Arturo - Estuardo - Enrique - Melania - mauricio -

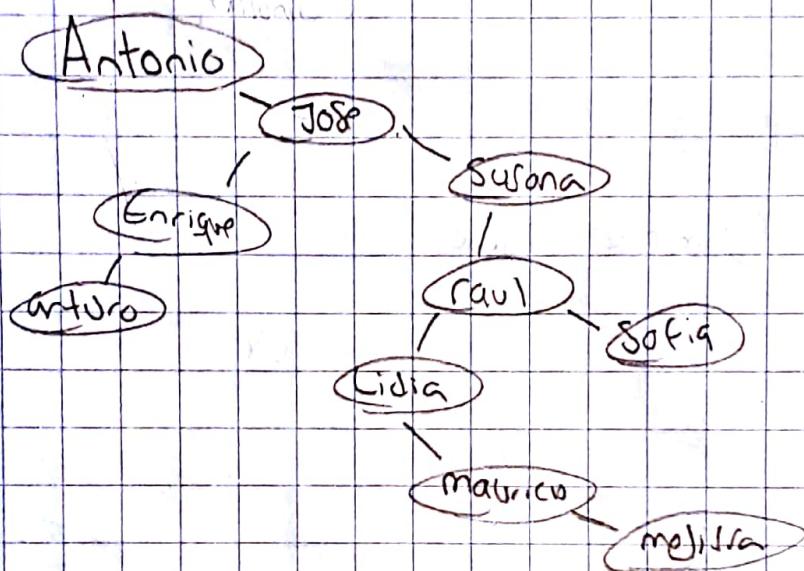
- Lidia - Sofia - raul - susana - Jose - Antonio

C.) Camino Estudiante 9: Antonio - José - Susana - Raúl - Lidia - Mauricio

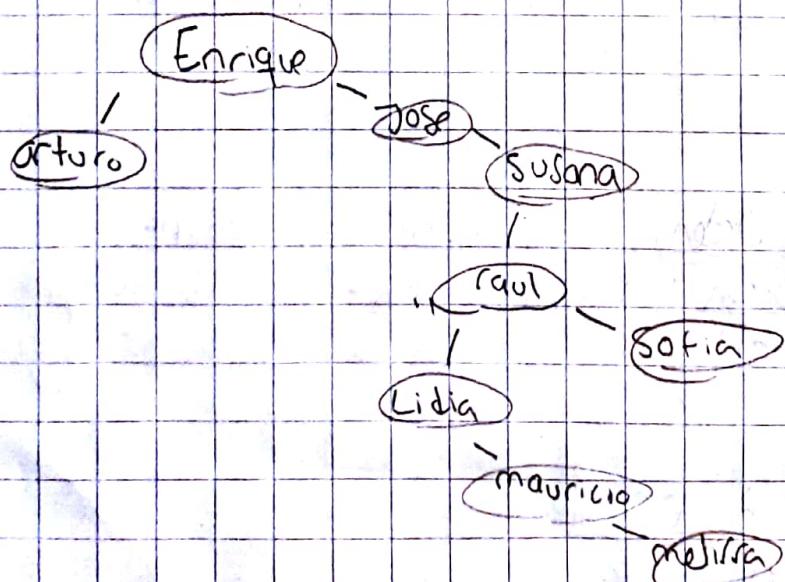
Camino Estudiante 8: Antonio - José - Susana - Raúl - Sofía

Camino Estudiante 10: Antonio - José - Enrique - Eduardo

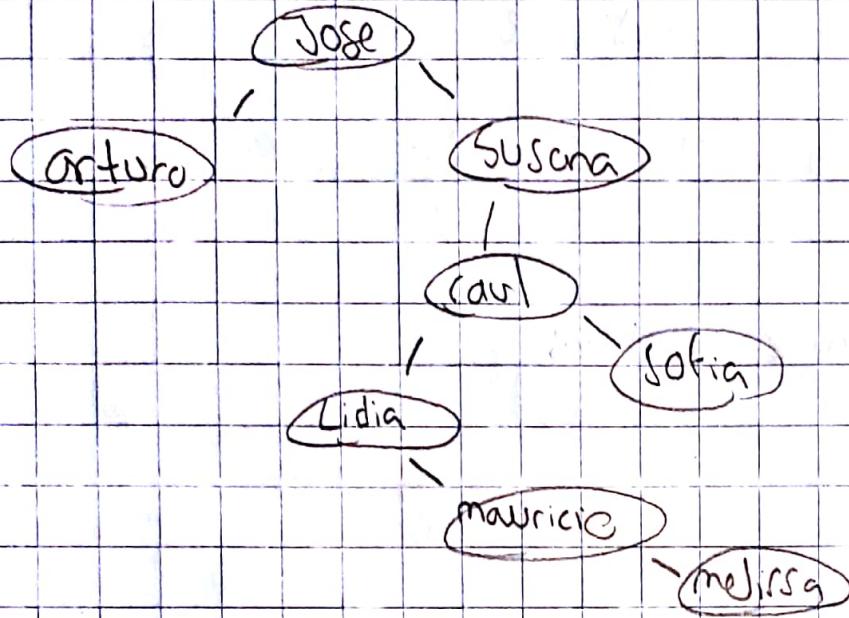
Eliminar Eduardo



Eliminar Antonio



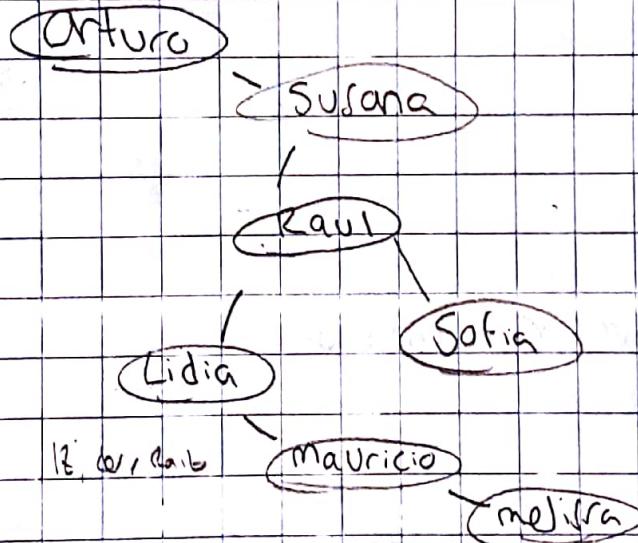
Eliminar Enrique



Eliminar Jose

$$\begin{aligned}a &= 1 \\s &= 20 \\r &= 18 \\l &= 11 \\s_2 &= 19 \\m_a &= 13 \\m_c &= 11\end{aligned}$$

Raiz, Izq, der Iz, Der, Raiz



b.) Pre Orden: Arturo - Susana - Raul - Lidia - mauricio - melisra - Sofia

In Orden: Arturo - Lidia - mauricio - melisra - Raul - Sofia - Susana

Post Orden: melisra - mauricio - Lidia - Sofia - Raul - Susana - Arturo

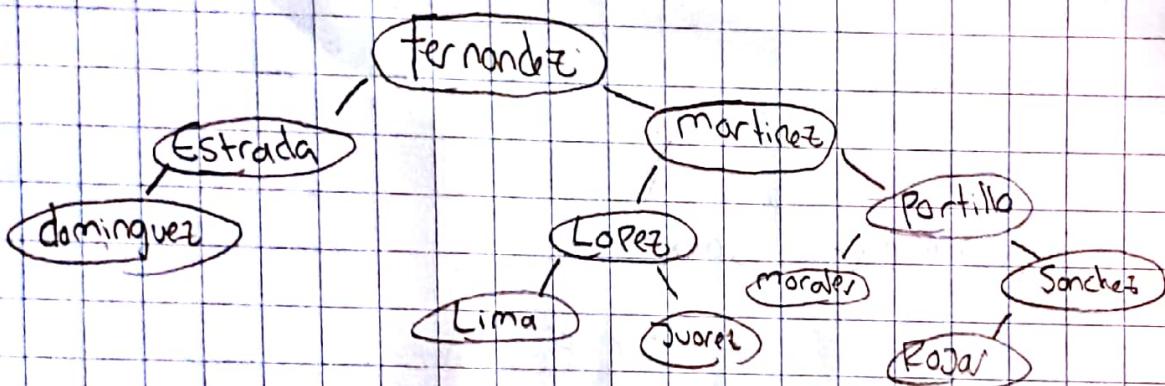
- c.) Estudiante 9: Arturo - Susana - raul - Lidia - mauricio
Estudiante 9: Arturo - Susana - raul - Sofia
Estudiante 10: Arturo - Susana - raul - Lidia

Arbol binario Apellido

Serie I

a)

Fernandez - martinez - Lopez - Estrada - Portillo - Sanchez
- Rojas - Morales - Estrada - Lima - Juarez - Dominguez



b)

• Camino Sanchez: Fernandez - martinez - Portillo - Sanchez

• Camino Fernandez: Fernandez

• Camino Portillo: Fernandez - martinez - Portillo

• Camino Dominguez: Fernandez - Estrada - Dominguez

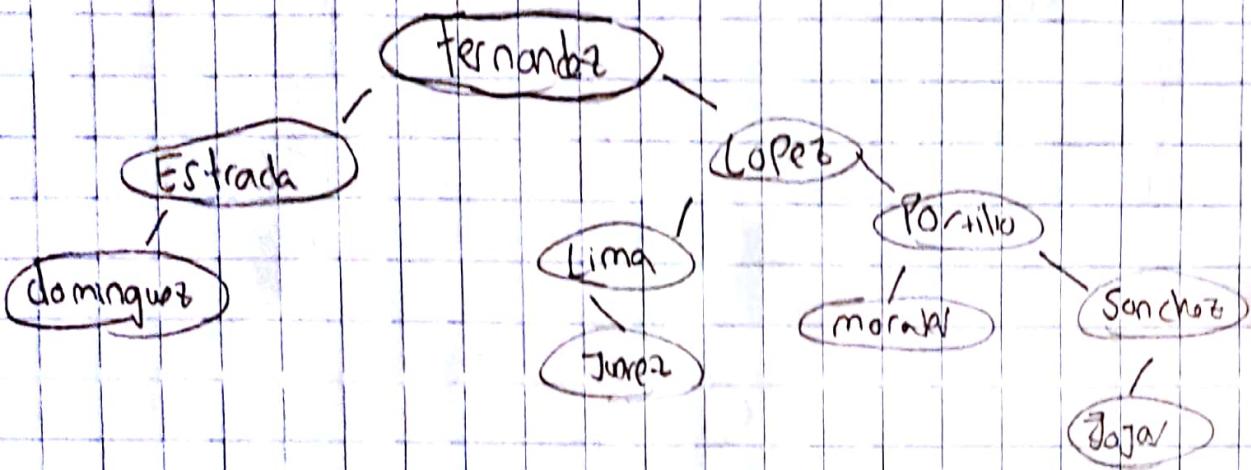
• Camino Lopez: Fernandez - martinez - Lopez

Serie II

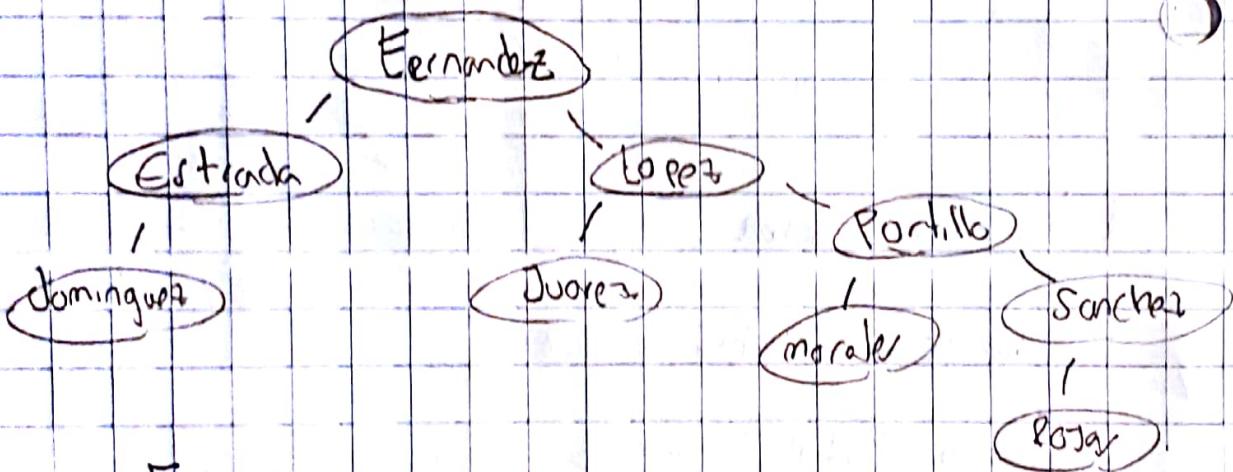
Raiz, izq, der • Pre: Fernandez - Estrada - Dominguez - Martinez - Lopez - Lima - Juarez - Portillo - Morales - Sanchez
Raiz, der, izq • Post: Dominguez - Estrada - Lima - Juarez - Lopez - Morales - Rojas - Sanchez - Portillo - Portillo - Martinez - Fernandez
Raiz, der, izq • In: Dominguez - Estrada - Fernandez - Lima - Lopez - Juarez - Martinez - Morales - Portillo - Rojas - Sanchez

Serie III

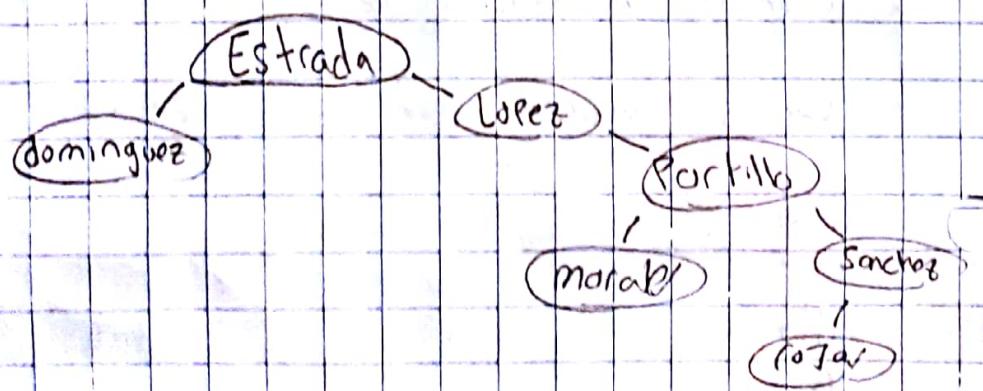
a) Eliminar Martínez



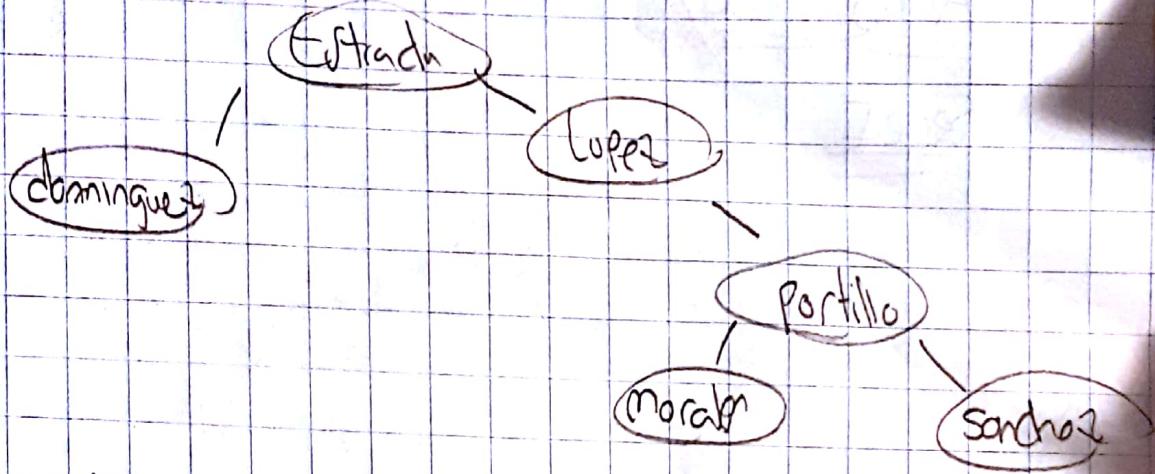
Eliminar Lima



Eliminar Fernandez



① Eliminar Roger



Eliminar Lopez



b) Pre Order: Estrada - dominguez - morales - Portillo - Sanchez

- In Order: dominguez - Estrada - morales - Portillo - Sanchez
- Post Order: dominguez - Sanchez - Portillo - morales - Estrada

c) • Camino Estrada : Estrada

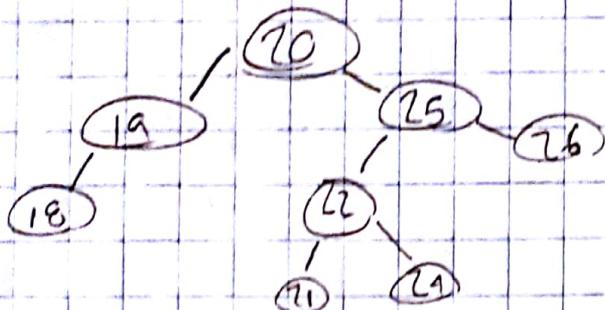
• Camino Morales : Estrada, Morales

• Camino Lma : —

Arbol edad

Serie I

a)



b)

• Camino 21 : 20 - 25 - 22 - 24

• Camino 20 : 20

• Camino 21 : 20 - 25 - 22 - 21

• Camino 22 : 20 - 25 - 22

Serie II)

• Pre Orden : 20 - 19 - 18 - 25 - 22 - 21 - 24 - 26

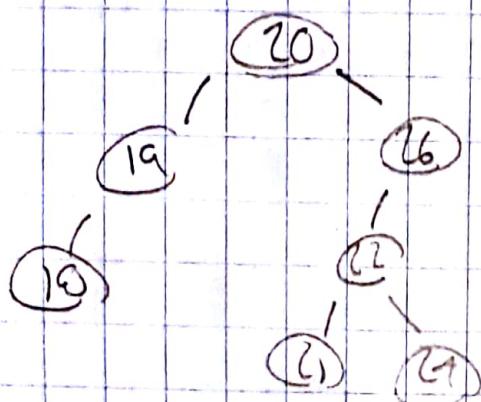
• In orden : 18 - 19 - 20 - 21 - 22 - 24 - 25 - 26

• Post orden : 18 - 19 - 21 - 24 - 22 - 26 - 25 - 20

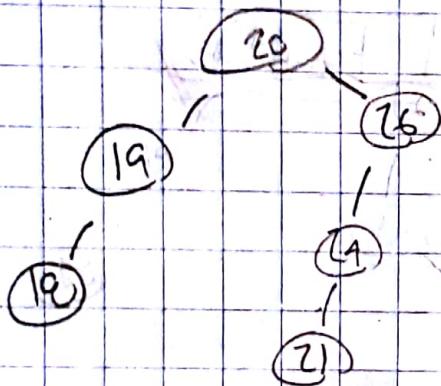
Serie III

a) Eliminar 20

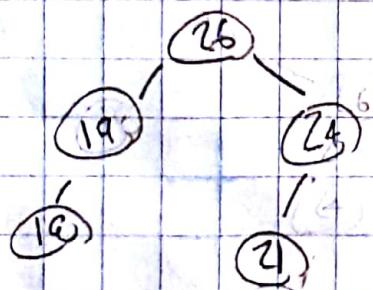
20, 25, 12, 19, 21, 24, 26, 15



Eliminar 22



Eliminar 20



Eliminar 25

b.) Pre Orden: 21 - 19 - 10 - 26 - 14

In Orden: 16 - 19 - 21 - 24 - 26

Post orden: 18 - 19 - 24 - 26 - 21

c.) Camino 21: 21

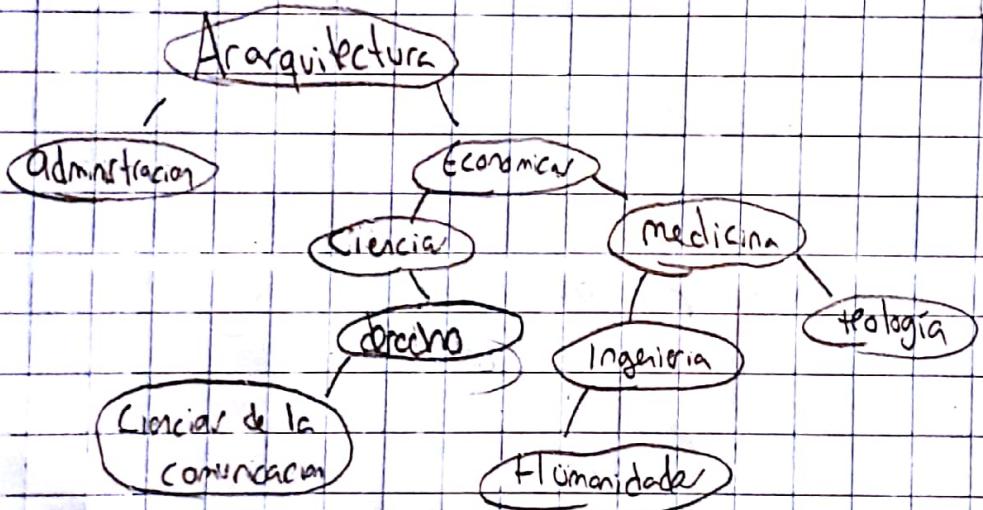
Camino 26: 21 - 21

Camino 22: —

Arbol Facultad

Serie 1

a.)



b.) Pre Orden: Arquitectura - administración - Económicas - Ciencias - Derecho
- Ciencias Comunicación - Medicina - Ingeniería - Humanidades - Teología

In Orden: administración - Arquitectura - Ciencias - Comunicación -
- Derecho - Económicas - Humanidades - Ingeniería - medicina -
teología

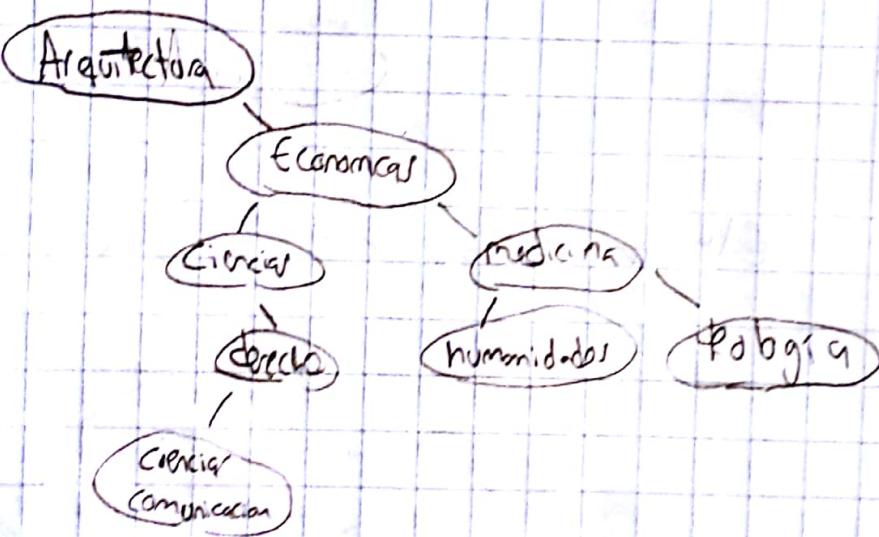
Post orden: administración - Comunicación - Derecho - Ciencias - Humanidades -
Ingeniería - teología - medicina - Económicas - Arquitectura

- b) Pro Orden: 21 - 19 - 10 - 26 - 14
- Camino Técnica: Arquitectura - Económicas - medicina - Pedagogía
 - Camino Arquitectura: Arquitectura
 - Camino Ingeniería: Arquitectura - Económicas - medicina - Ingeniería
 - Camino Comunicación: Arquitectura - Económicas - Ciencias - Derecho - Comunicación
 - Camino Económicas: Arquitectura, Económicas

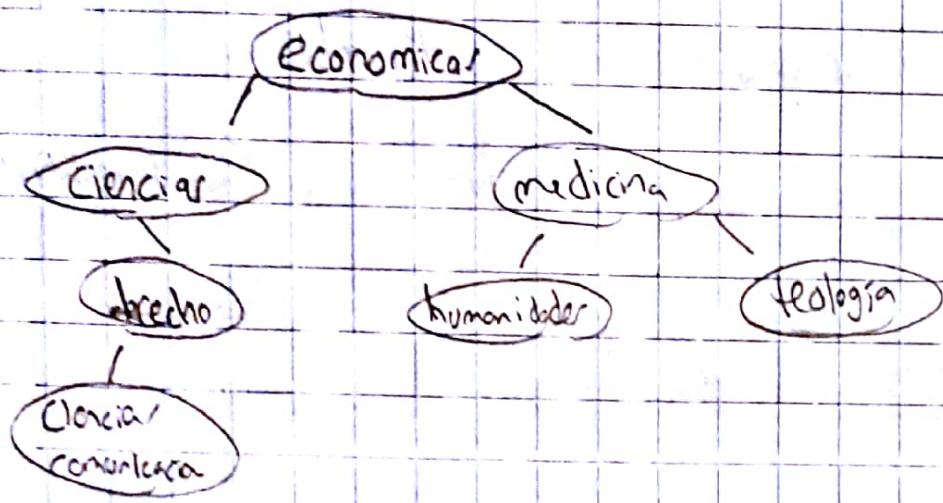
Serie III

a.) Eliminar administración

• Eliminar Ingeniería



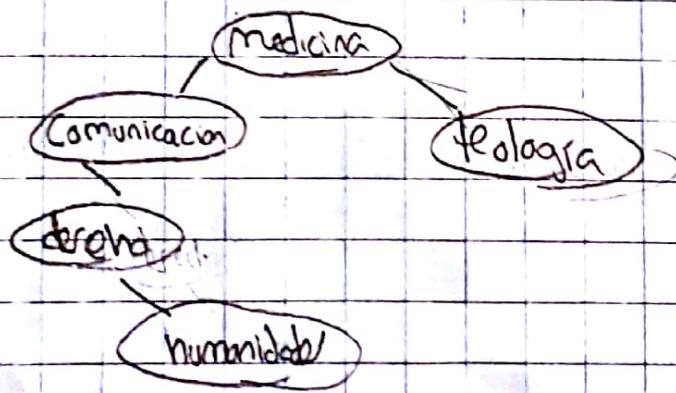
• Eliminar defelco Arquitectum



• Eliminar Ciencias



Eliminar GeogramArt Economicas



versión) Arquitectura

b) 8

Pre orden: medicina - comunicacion - derecho - humanidad - tecnologia

In orden: Comunicacion - derecho - humanidad - Medicina - tecnologia

Post orden: humanidad - derecho - Comunicacion - tecnologia - medicina

$$m = 12$$

$$c = 3$$

$$d = 4$$

$$h = 7$$

$$t = 20$$

c) • Camino humanidad: medicina - comunicacion - derecho - humanidad

• Camino derecho: medicina - comunicacion - derecho

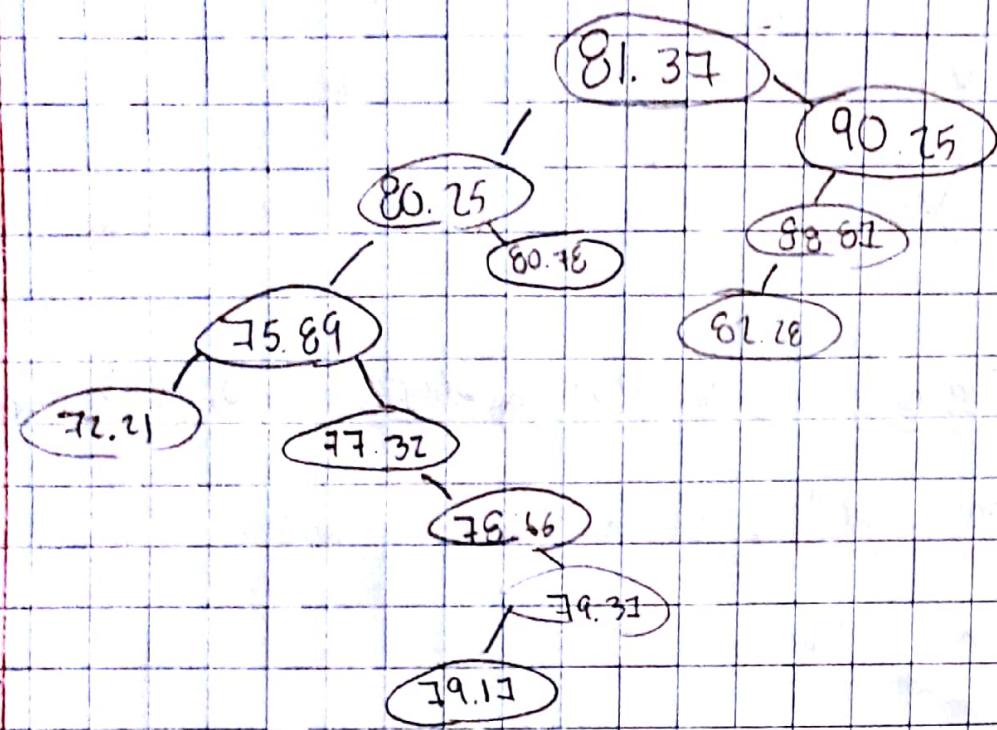
• Camino Ingenieria: —

Arbol Promedio

Serie T

a)

$70 = 72.11$
 $71 = 75.89$
 $72 = 75.32$
 $73 = 75.62$
 $74 = 72.16$
 $75 = 75.37$
 $76 = 80.17$
 $77 = 83.28$
 $78 = 81.52$
 $79 = 82.20$
 $80 = 88.61$
 $81 = 200.4$



b) Camino 90.25 - 81.37 - 90.25

• Camino 81.37; 81.37

• Camino 78.66; 81.37 - 80.25 - 75.89 - 77.32 - 78.66

• Camino 79.17; 81.37 - 80.25 - 75.89 - 77.32 - 78.66 - 79.37 - 79.17

• Camino 75.89; 81.37 - 80.25 - 75.89

Serie T'

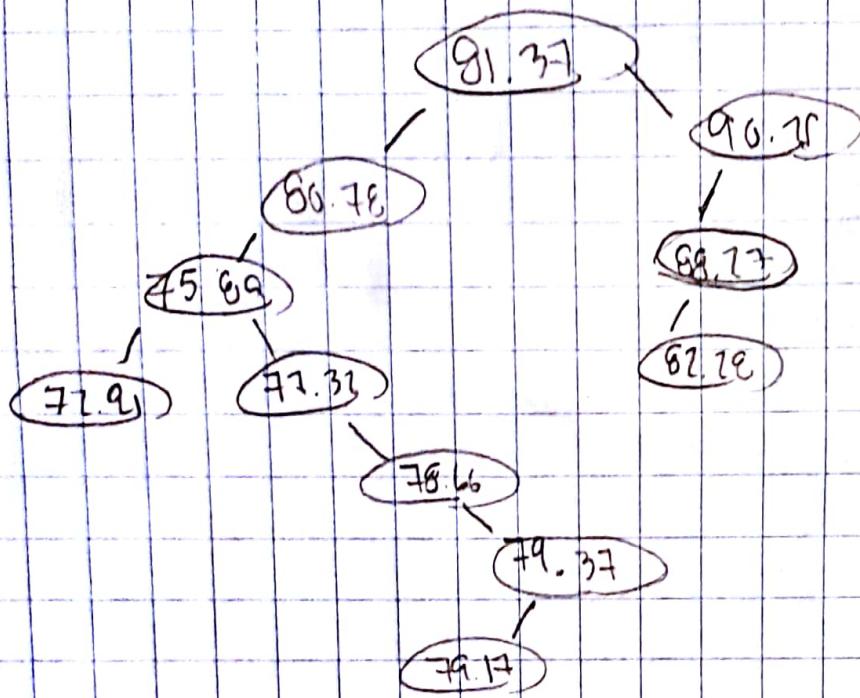
• Pre Orden; 81.37 - 80.25 - 75.89 - 72.21 - 77.32 - 78.66 - 79.37 - 79.17 - 80.78 - 90.25
- 86.87 - 82.28

• In orden; 72.21 - 75.89 - 77.32 - 78.66 - 79.17 - 79.37 - 80.78 - 80.25 - 81.37 - 82.28
- 86.87 - 90.25

• Post Orden; 72.21 - 79.17 - 74.37 - 78.66 - 71.89 - 80.78 - 80.25 - 82.28 - 86.87 - 81.37

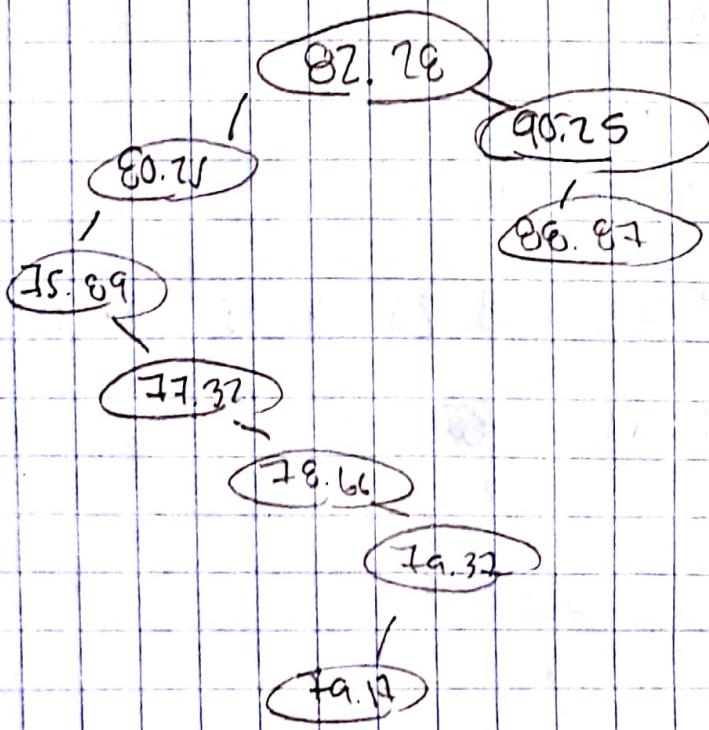
Serie IV

a) Eliminar 86.25



Eliminar 72.71

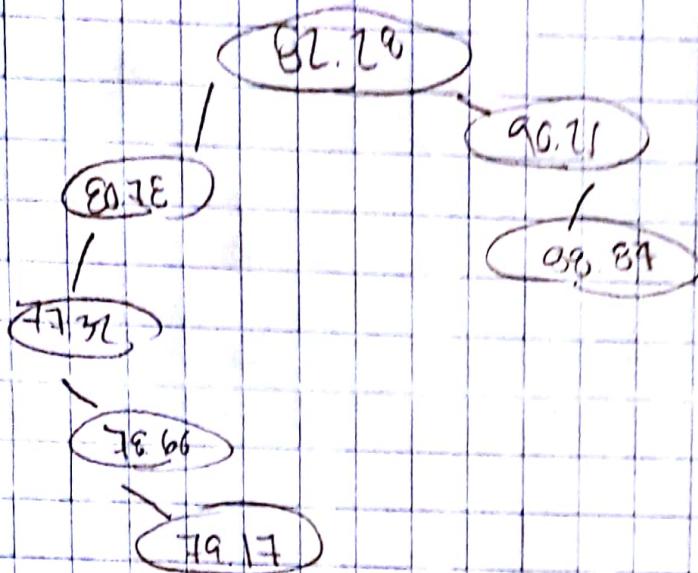
Eliminar 81.37



Arbol Promedio //

Eliminar 79.37

Eliminar 75.89



b) Pre Orden: 82.28 - 80.78 - 77.32 - 78.66 - 79.17 - 90.71 - 88.87)

In Orden: 77.32 - 78.66 - 79.17 - 82.28 - 88.87 - 90.71

Post Orden: 79.17 - 78.66 - 77.32 - 80.78 - 90.71 - 82.28

c.) Camino 82.28: 82.28

Camino 88.87: 82.28 - 90.71 - 88.87

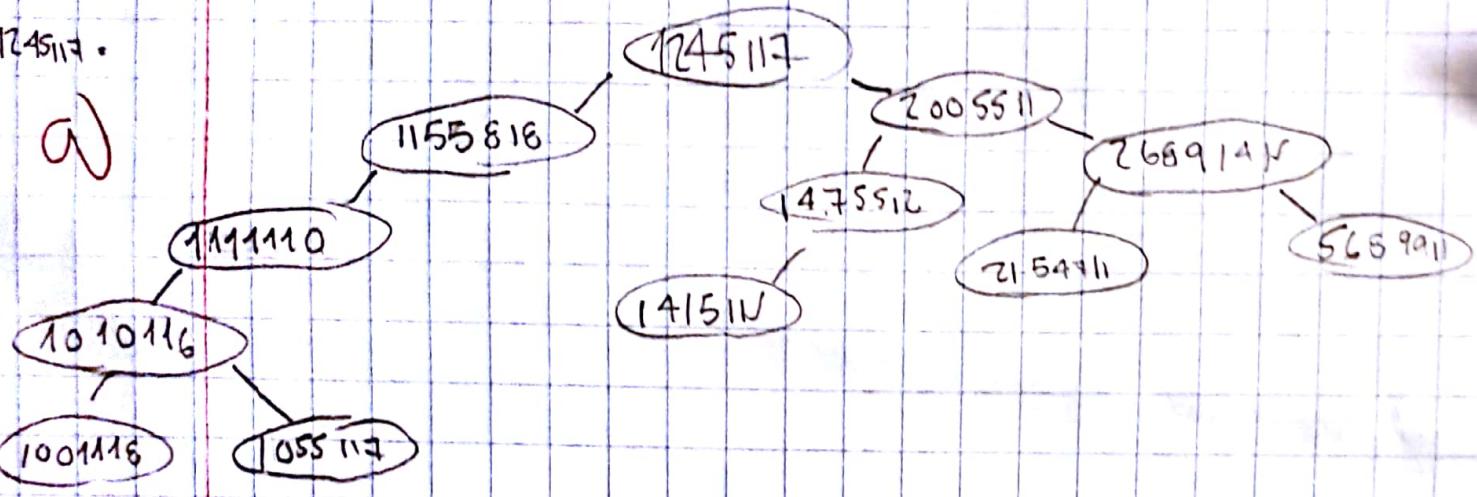
Camino 97.21: 82.28 -

Arbol Corné

Serie I //

1245117.

a)



b)

Camino 1155816 : 1245117 - 1155816

Camino 1245117 : 1245117

Camino 5659911 : 1245117 - 2005511 - 2689145 - 5659911

Camino 1055117 : 1245117 → 1155816 - 1111110 - 1010116 - 1055117

Camino 2689145 : 1245117 - 2005511 - 2689145

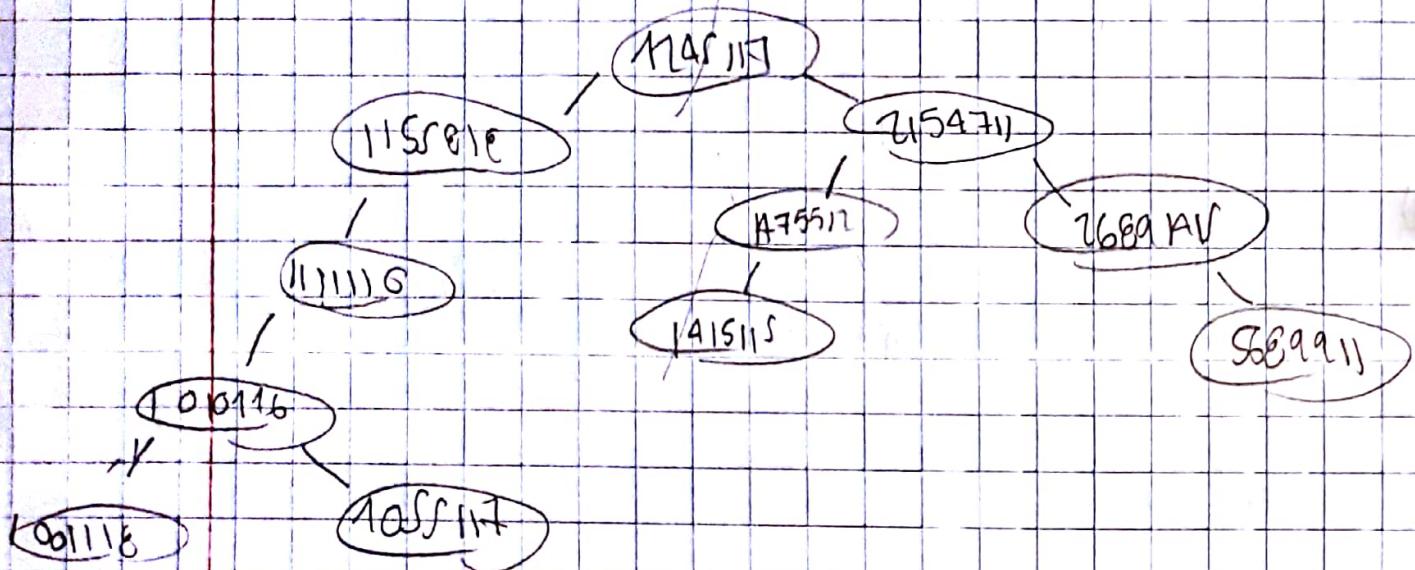
Serie II

Preorden : 1245117 - 1155816 - 1111110 - 1010116 - 1055117 - 1010116 - 1055117 - 2005511 - 1475512 - 1415115 - 2689145 - 2154711 - 5659911

In orden : 1004410 - 1010116 - 1055117 - 1010116 - 11110 - 1155816 - 1245117 - 1415115 - 1475512

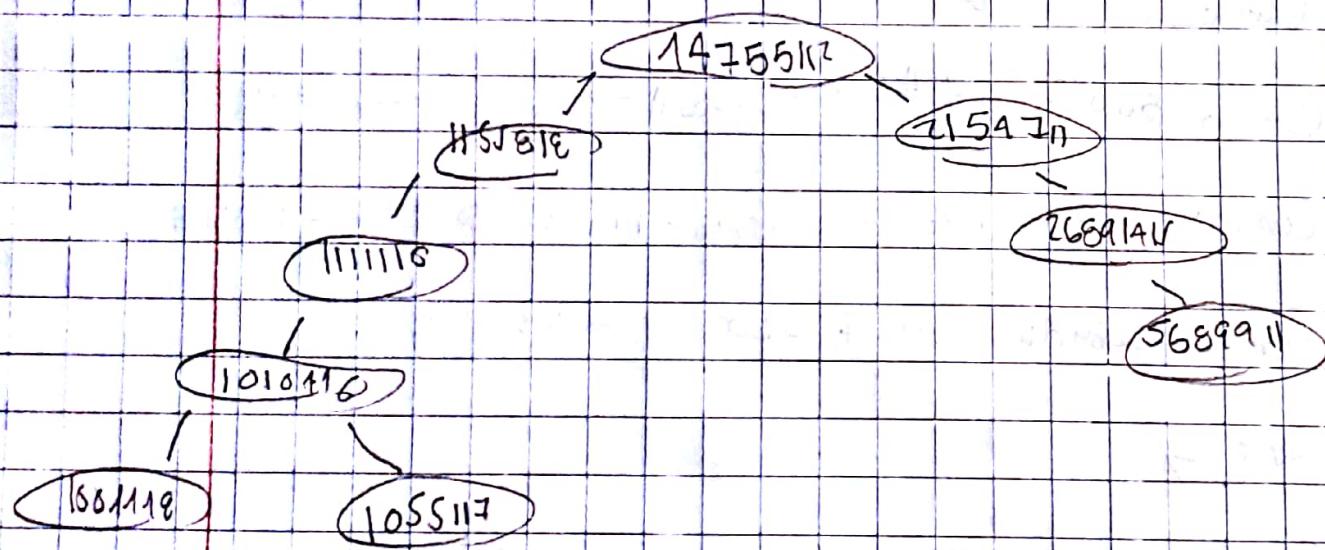
Serie III)

a) Eliminar 200111



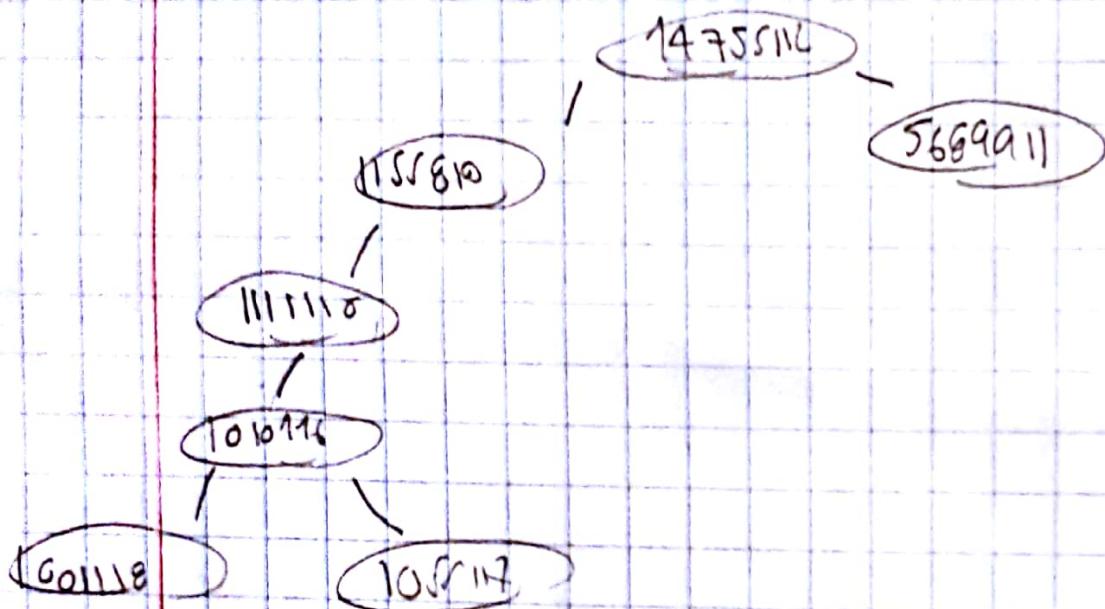
Eliminar 1415115

Eliminar 124117



Eliminar 2154711

Eliminar 2689911



b.) Pre Orden : 14755112 - 1155810 - 1001110 - 1010116 - 1055117 - 5669911

In orden : 1001110 - 1010116 - 1055117 - 1155810 - 1155810 - 14755112
- 5669911

Post orden : 1001110 - 1055117 - 1010116 - 1155810 - 1155810 - 5669911

C) Camino 1010116 : 14755112 - 1155810 - 1001110 - 1010116

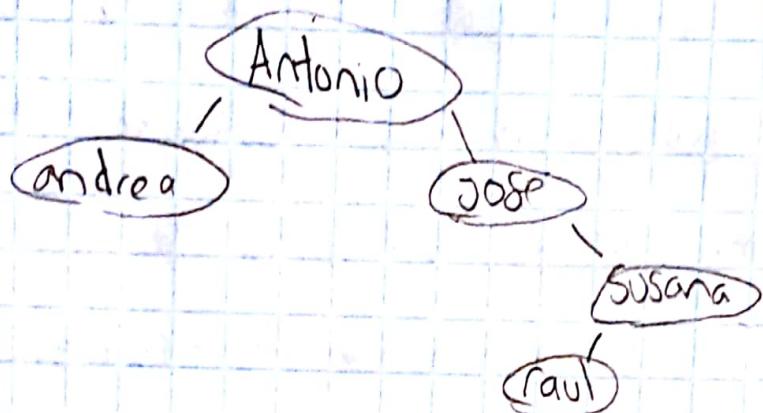
Camino 1111110 : 14755112 - 1155810 - 1111110

Camino 1111115 :

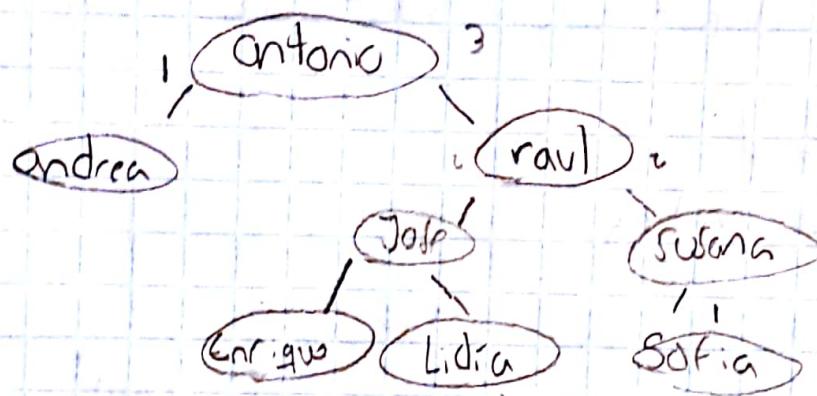
Arbol Nombre

D) Serie I //

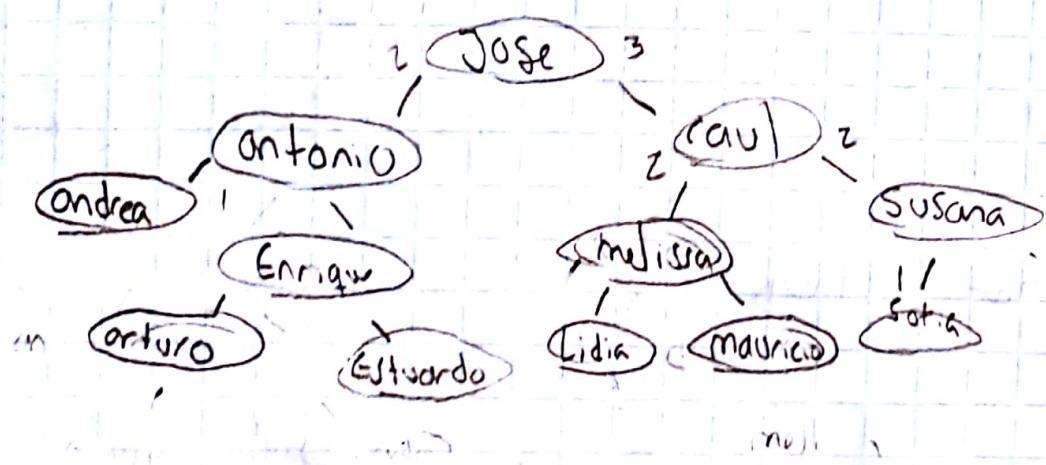
a)



b)



c)



• Camino Lidia : Jose - Raul - mélissa - Lidia

• Camino Antonio: Jose - Antonio

• Camino Raul: Jose - Raul

• Camino Arturo: Jose - Antonio - Enrique - Arturo

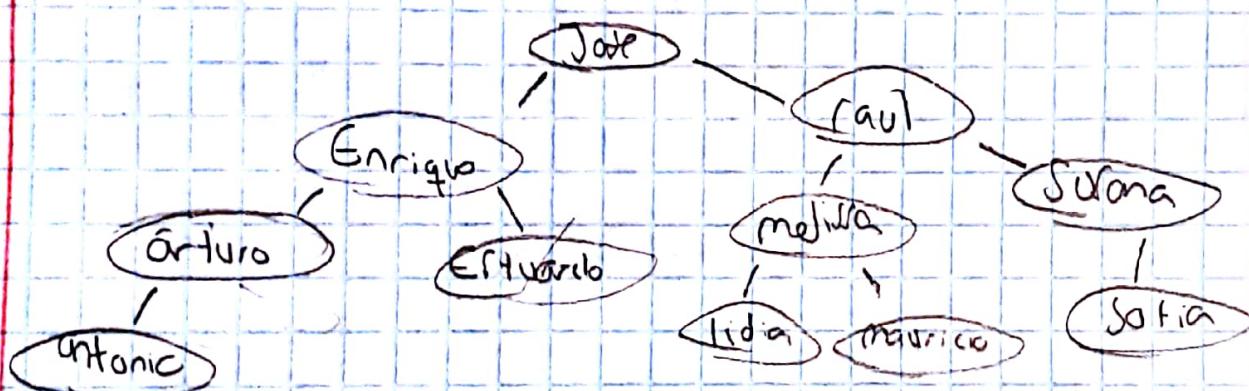
• Camino Jose: Jose

Serie II

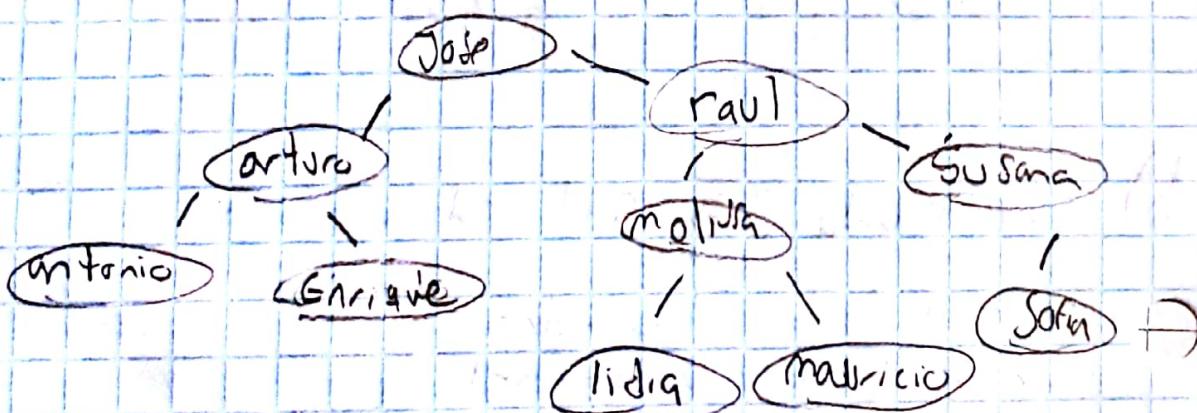
- o Pre Orden: José - Antonio - Andrea - Enrique - Arturo
 - Estuardo - Raul - melissa - Lidia - mauricio - Susana - Sofía
- o Post orden: Andrea - Arturo - Estuardo - Enrique - Antonio
 - Lidia - mauricio - melissa - Raul - Susana - Sofía - José
- o In orden: Andrea - Antonio - Arturo - Enrique - Estuardo - José
 - Lidia - melissa - mauricio - raul - sofia - susana.

Serie III

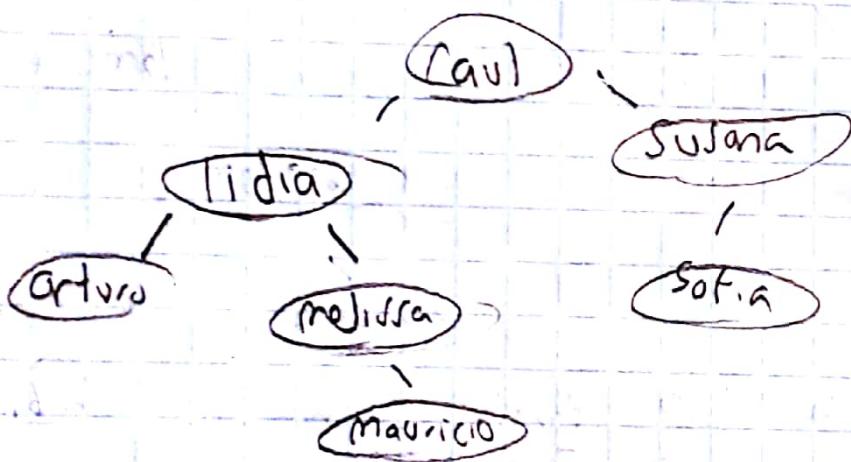
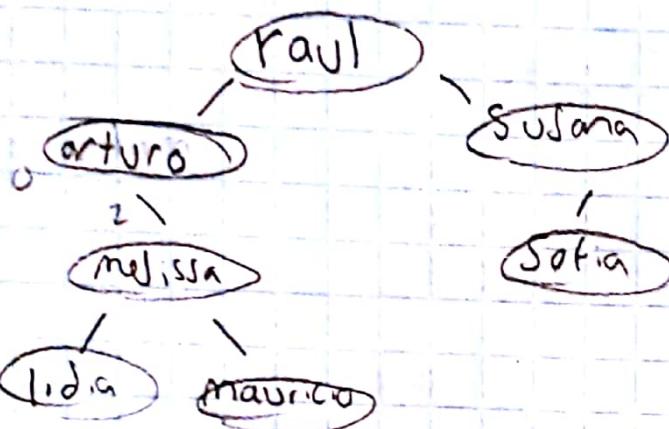
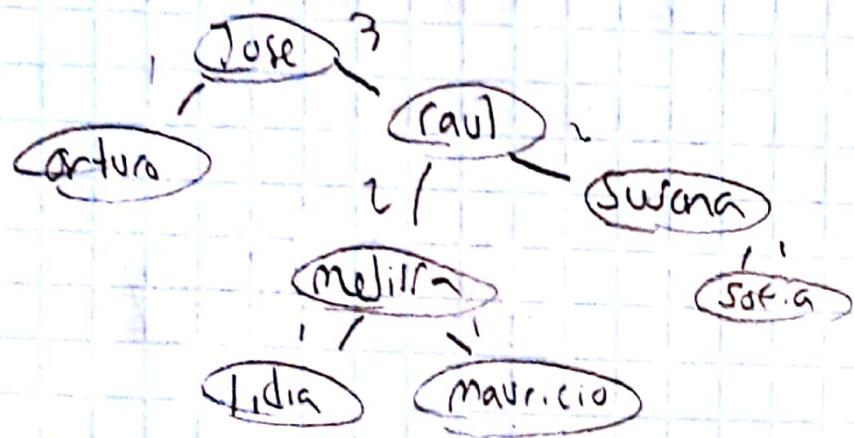
Eliminar Andrea



Eliminar estuardo



Eliminar Arturo, Enrique, Jose



b). Pre Orden: Raul - Lidia - arturo - melissa - mauricio - susana - sofia

Post orden: arturo - mauricio - melissa - lidia - sofia - susana - raul

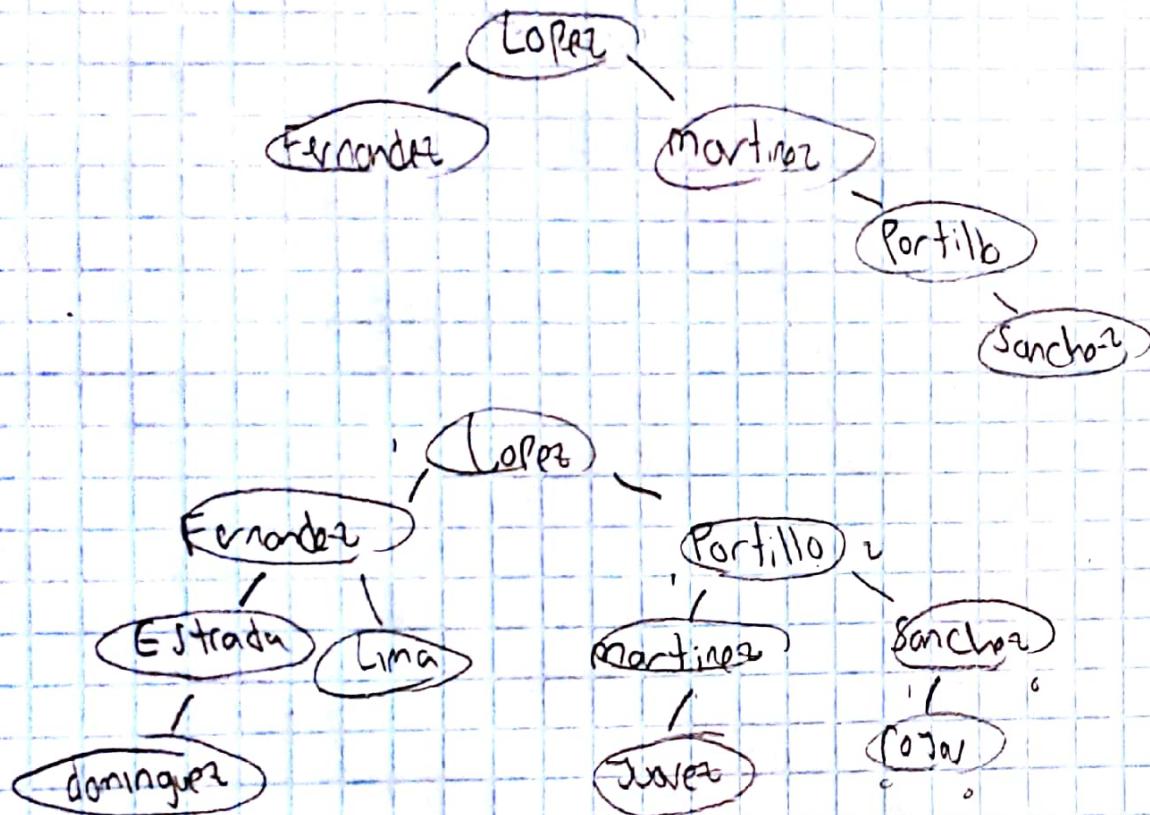
In orden: arturo - lidia - melissa - mauricio - raul - sofia - susana

c) Camino Macario: Raul - Lidia - Melisa - Macario

Camino Sofia: Raul - Susana - Sofia

Camino Eduardo: —

Arbol Apellido



b) Camino Sanchez: Lopez, Portillo, Sanchez

Camino Fernandez: Lopez, Fernandez

Camino Portillo: Lopez, Portillo

Camino Dominguez: Lopez, Fernandez, Estrada, Dominguez

Camino Lopez: Lopez

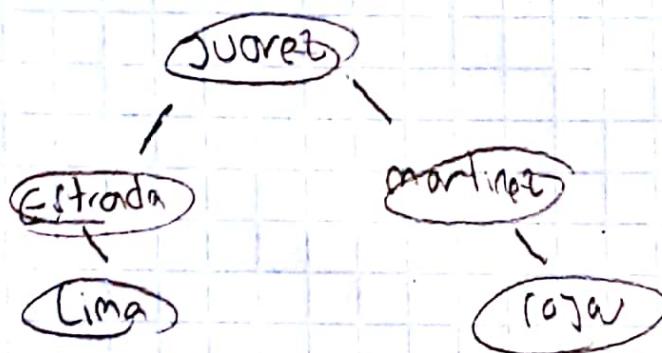
Serie II

a) Pre orden: Lopez - Fernandez - Estrada - Dominguez - Lima - Portillo - Martinez
Juarez - Sanchez - Rojas

- b) In orden: Dominguez - Estrada - Fernandez - Lima - Lopez
- Juarez - Martinez - Portillo - Sanchez - Rojas - Sanchez
- c) Post orden: dominguez - estrada - Lima - fernandez - juarez - martinez
- rojas - sanchez - portillo - Lopez

Serie 18/

- c) Eliminar Sanchez, Fernandez, Portillo, Dominguez, Lopez



b) Pre Order: Juarez - Estrada - Lima - Martinez - Rojas

Post orden: Estrada - Lima - Juarez - Martinez - Rojas

Post orden: Lima - Estrada - Rojas - Martinez - Juarez

c) Camino Estrada: Juarez - Estrada

Camino Morata -

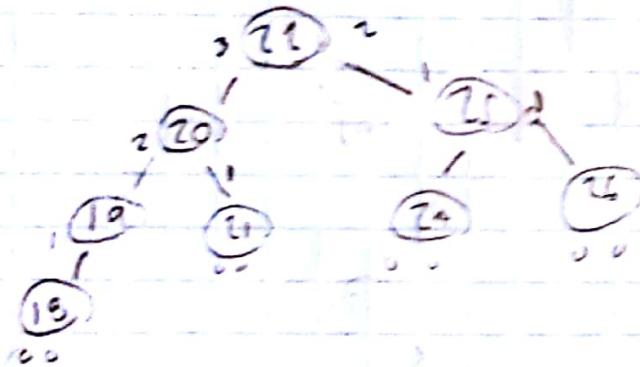
Camino Lima: Juarez - Estrada - Lima

Arbol AVL Edad

Serie I

26, 25, 22, 19, 16, 24, 21, 17, 15, 12, 18, 23

a)



b) Camino: 24 : 22-25-24

Camino 20 : 22-20

Camino 21 : 22-20-21

Camino 22 : 22

Serie II

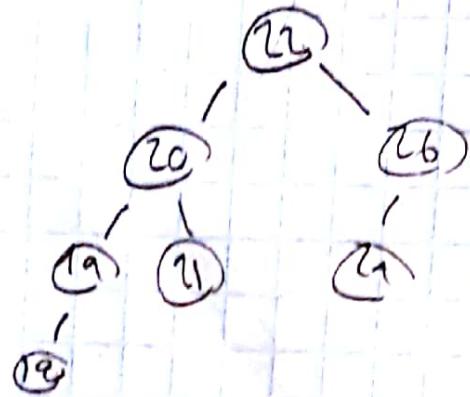
o Pre Orden : 22-20-19-18-16-25-24-26

o Post orden : 18-19-21-20-24-26-25-22

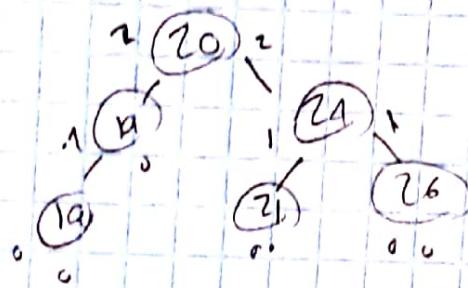
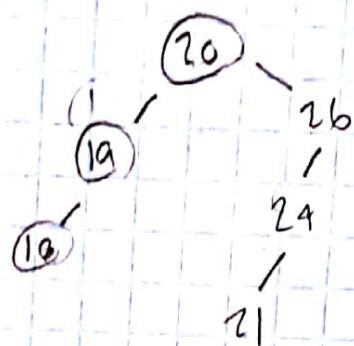
o In Orden : 18-19-20-21-22-24-25-26

Serie III

a.) Glimmer 25



Eliminar 22

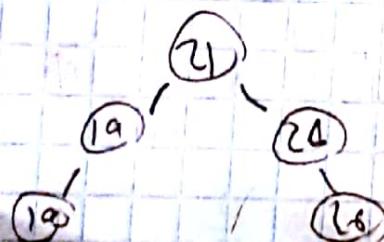


Eliminar

(20)



Eliminar (21)



b) Pre Order : 21-19-18-24-26

Post order : 19-18-26-24-21

In order : 18-19-21-24-26

c) Camino 21 : 21

Camino 26 : 21-24-26

Camino 22 : ~~21~~

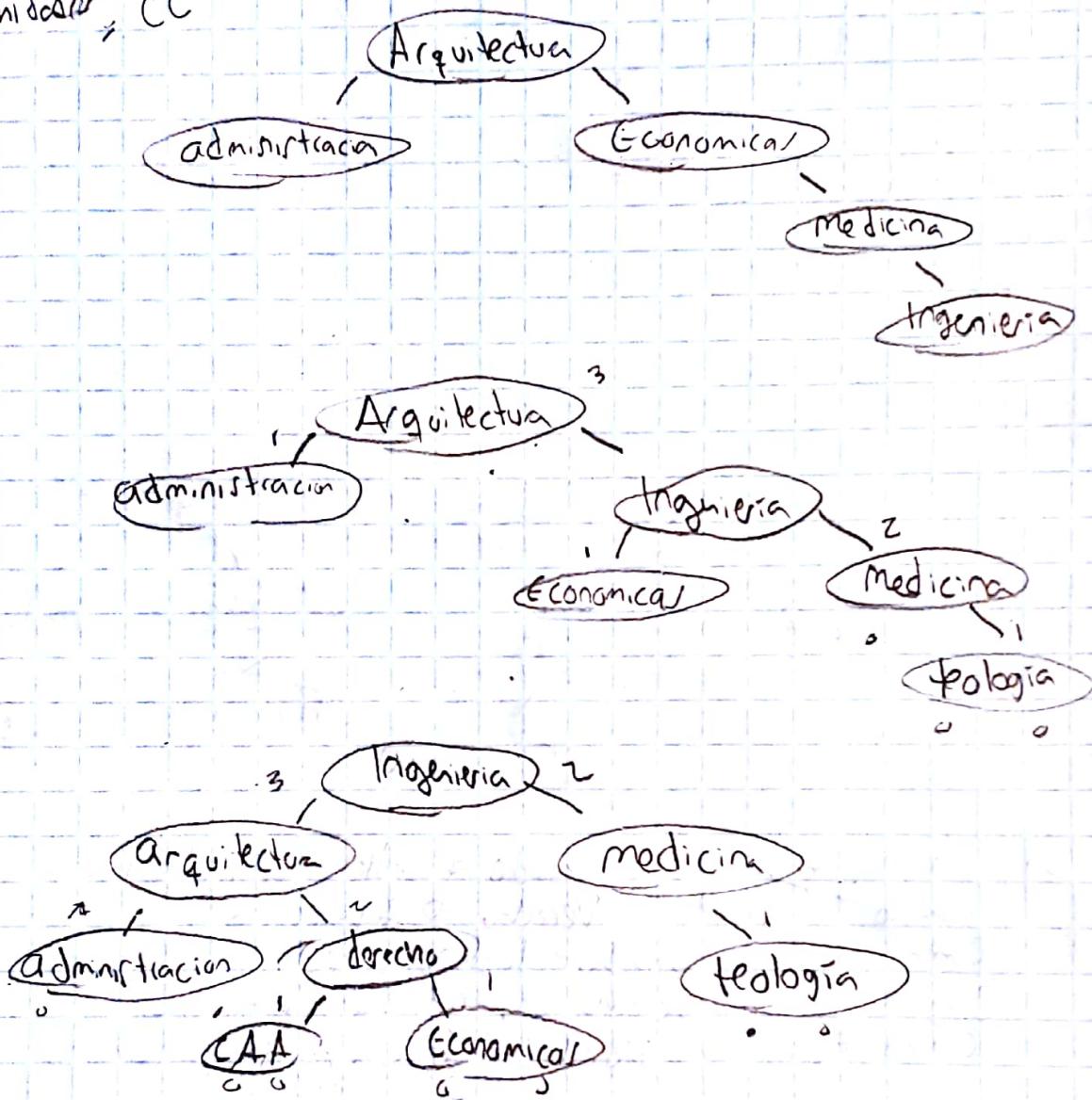
Arbol Av | Facultad

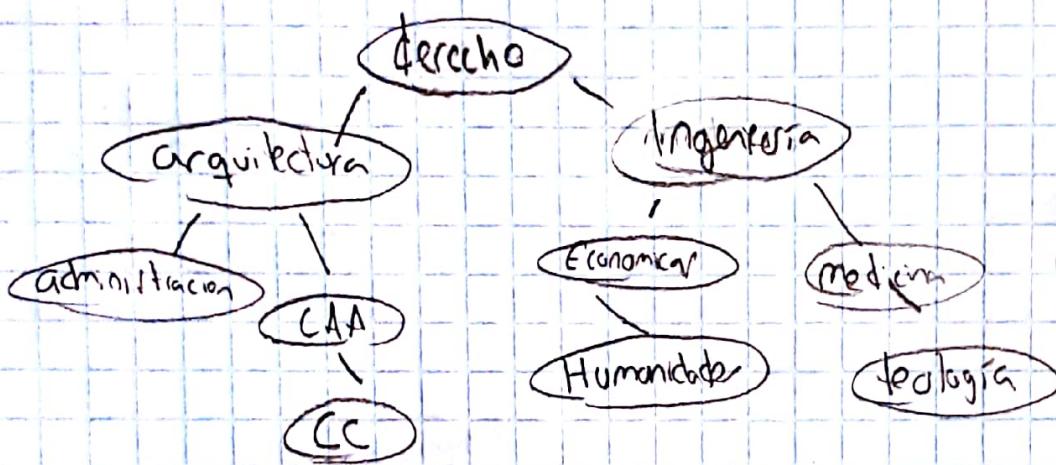
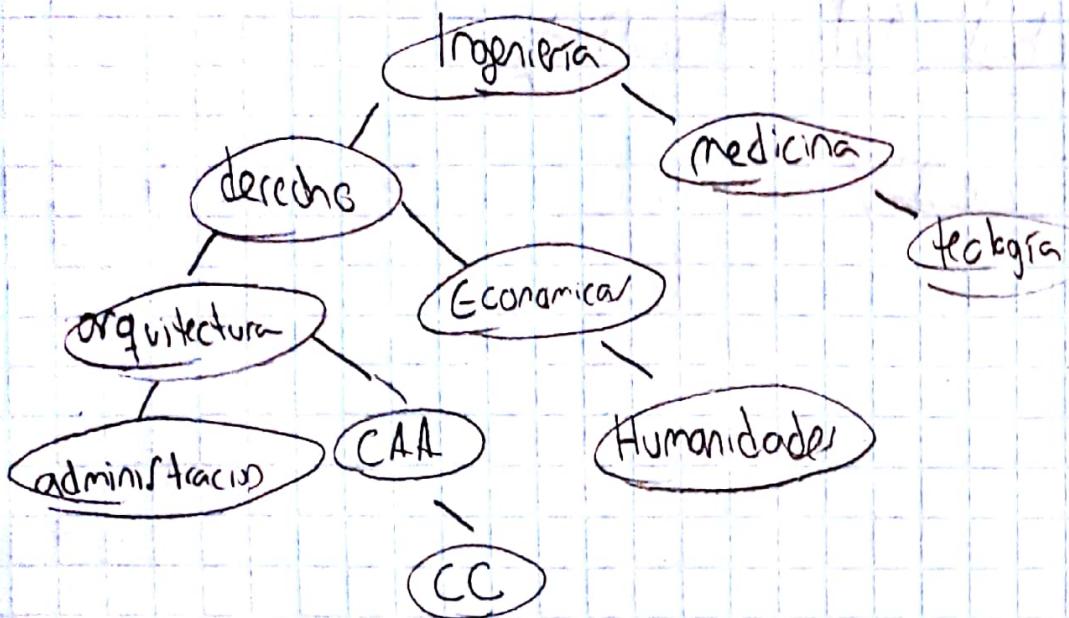
Serie I

Arqui - Admin - Econo - Medic = Ing - Teol, CAA - Derech -

Humanidades, CC

a)





b) Camino teología : Derecho \Rightarrow medicina \Rightarrow teología

Camino Arquitectura : Derecho \Rightarrow Arquitectura

Camino Ingenieria : Derecho \Rightarrow Ingenieria

Camino CC : Derecho - Arquitectura - CAA \Rightarrow CC

Camino Economica/ : Derecho - Ingenieria - Economica/

Serie II

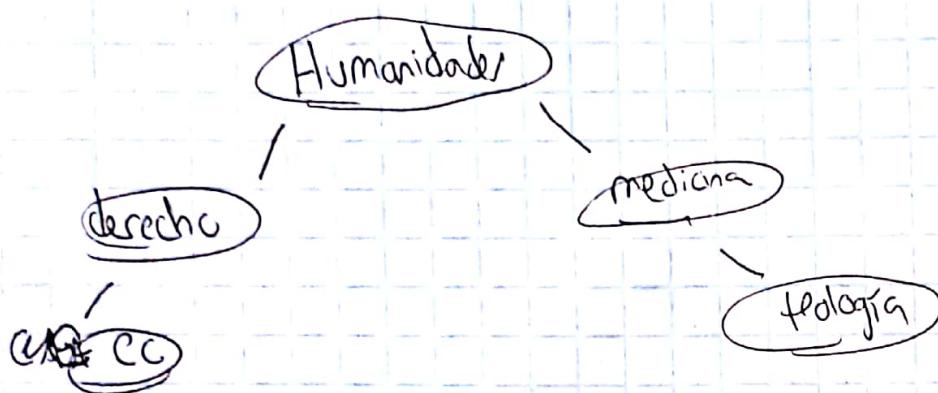
• Pre Orden: Derecho - Arqui - admin - CAA - CC - Inge - Econo - Huma - Medi - teolo

• Post orden: admin - CC - CAA - Arqui - huma - Econo - teolo - medi - Inge - Derecho

• Inorden: admin - arqui - CAA - CC - Derecho - econo - huma - Inge - medi - teolo

Serie III)

a) Eliminar Admin, Inge - Arqui - CAA - Economicas



b) Pre orden : Humanidades - derecho - CC - medicina - teología

In orden : CC - derecho - Humanidades - medicina - teología

Post orden: CC - derecho - teología - medicina - Humanidades

c) Camino Humanidades: Humanidades

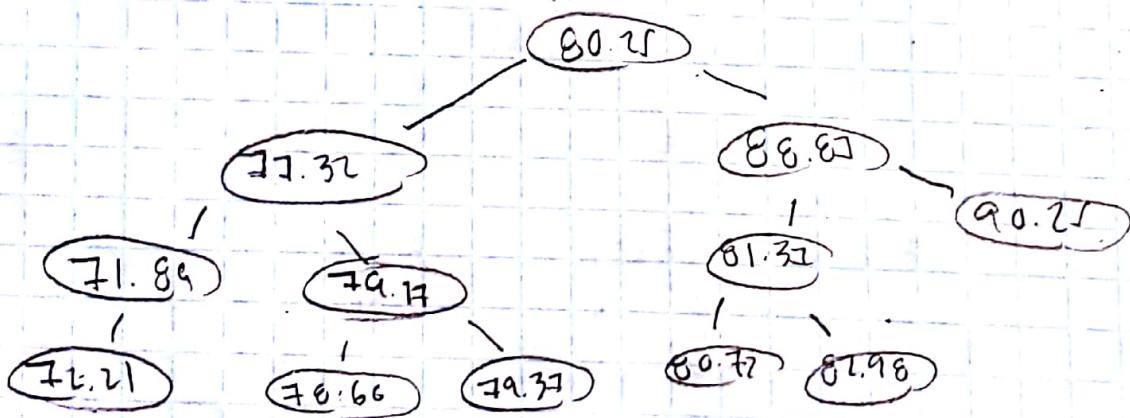
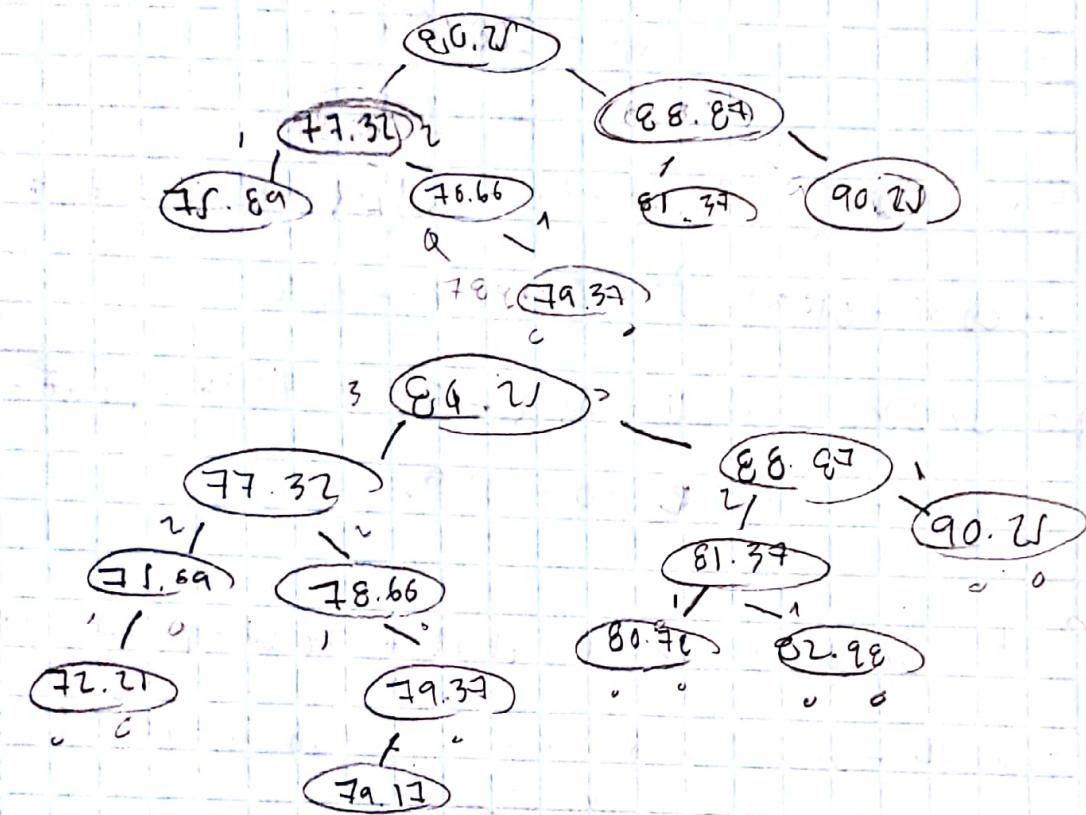
Camino Derecho: Humanidades - derecho

Camino Ingenieria: —

Arbol Promedio

81.37, 80.21, 71.89, 77.32, 78.66, 90.25, 79.37
88.87, 82.98, 72.21, 80.76, 79.17

a)



b)

Camino 90 V: 80.V - 88.80 - 90.V

Camino 81.37: 80.75 - 88.37 - 81.37

Camino 78.66: 80.V - 77.32 - 79.17 - 78.66

Camino 79.17: 80.V - 77.32 - 79.17

Camino 75.89: 80.V - 75.89

Serie II

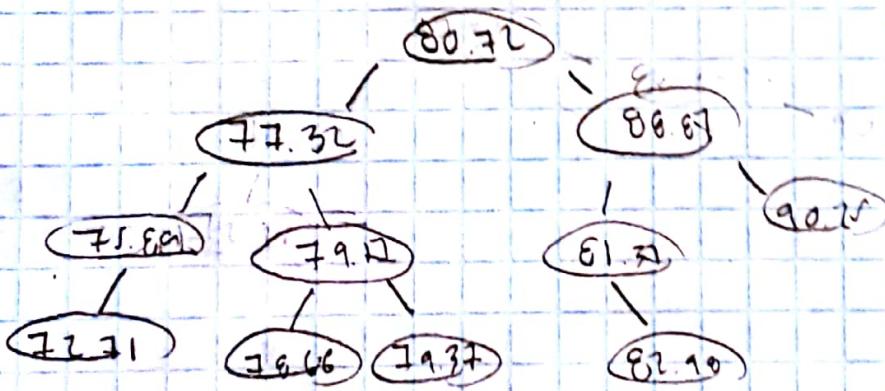
6) Pre Orden: 80.V - 77.32 - 78.66 - 72.21 - 79.17 - 78.66 - 79.37
- 88.80 - 81.37 - 80.72 - 82.98 - 90.25

In orden: 72.21 - 75.89 - 78.66 - 79.17 - 79.37 - 80.V
- 80.72 - 81.37 - 82.98 - 88.83 - 90.25

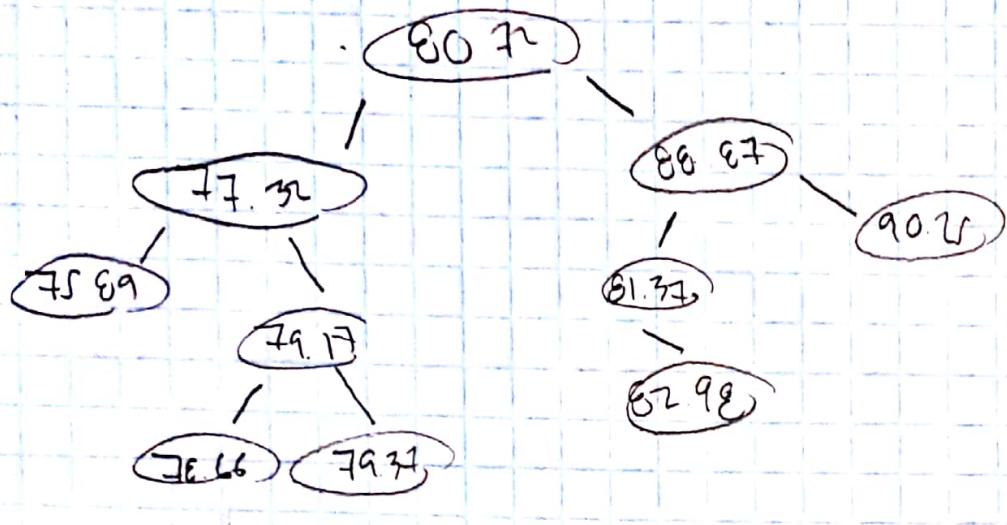
Post Orden: 72.21 - 75.89 - 78.66 - 79.37 - 79.17 - 77.32
- 80.72 - 82.98 - 81.37 - 90.25 - 88.83 - 80.V

Serie III

Eliminar 80.V



Qimnor 72.21, 81.37, 79.37, 75.89



b) Pre orden : 80.72 - 77.32 - 75.89 - 79.17 - 78.66 - 79.37
- 88.87 - 81.37 - 82.98 - 90.21

In orden :

75.89 - 77.32 - 78.66 - 79.17 - 79.37 - 80.72 - 81.37 - 82.98
- 88.87 - 90.21

Post orden : 75.89 - 78.66 - 79.37 - 79.17 - 77.32 - 82.98
- 81.37 - 90.21 - 88.87 - 80.72

c) Camino 82.28 : 80.72 - 88.87 - 81.37 - 82.98

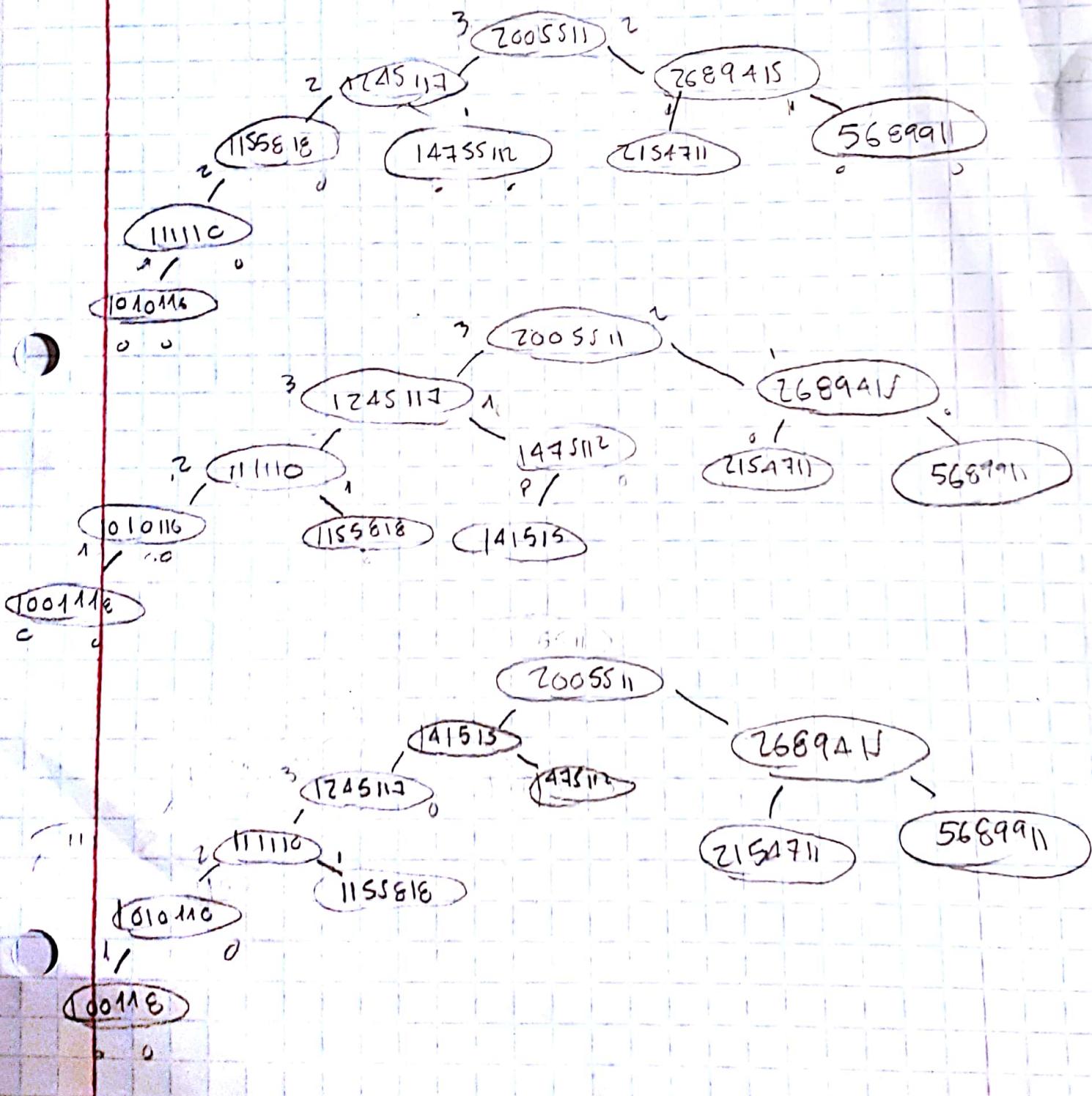
Camino 80.87 : 80.72 - 88.87

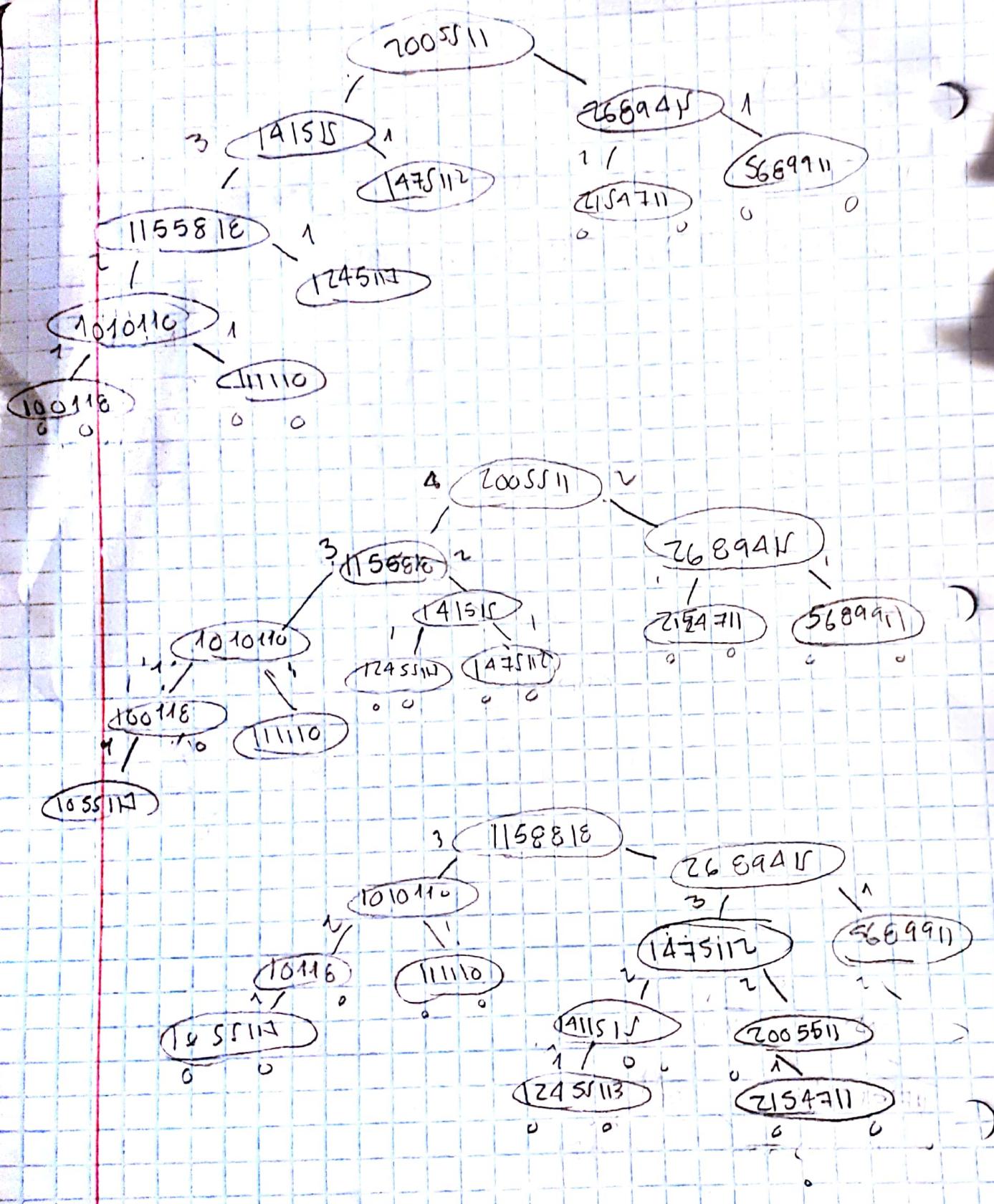
Camino 72.21 : _____

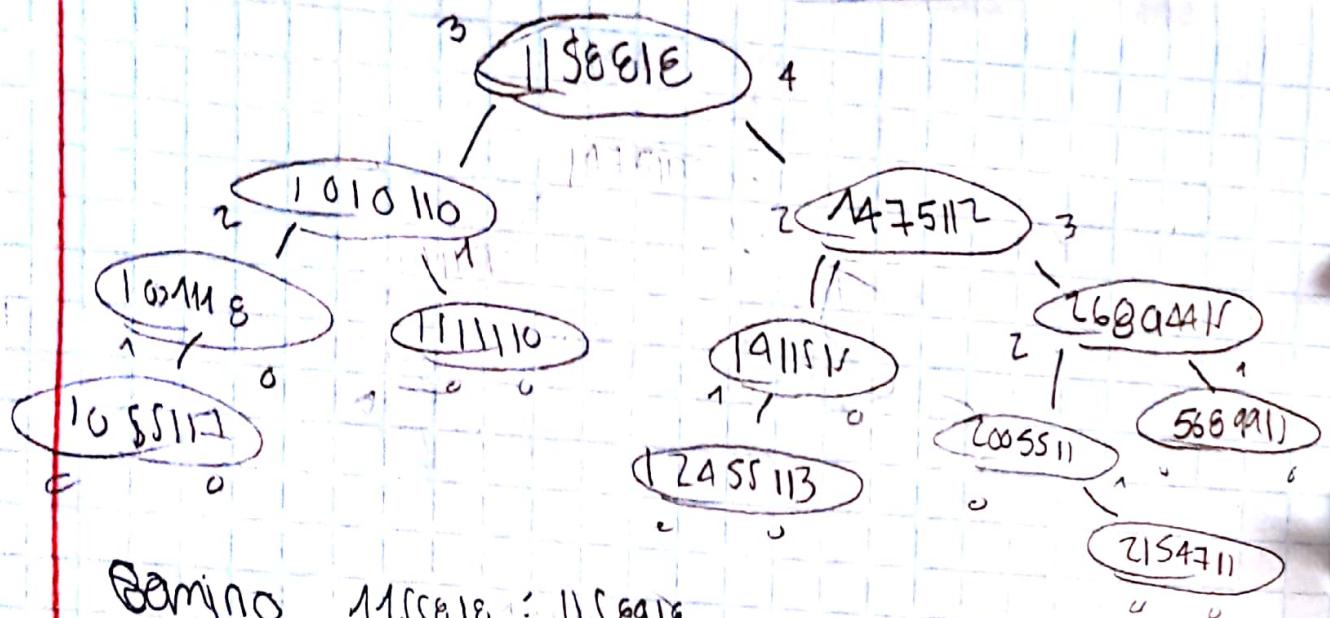
Arbol Caret

Serie F

a) 1245117, 2005511, 7689415, 1475512, 5689911, 1155818
 , 2154711, 1111110, 1010116, 111110, 1155818, 1055117







b

Camino 1118816 : 1118816

Camino 12455113 : 1118816 - 1475112 - 1411111 - 12455113

Camino 5689911 : 1118816 - 1475112 - 26804415 - 5689911

Camino 1055117 : 1118816 - 1010110 - 1001110 - 1055117

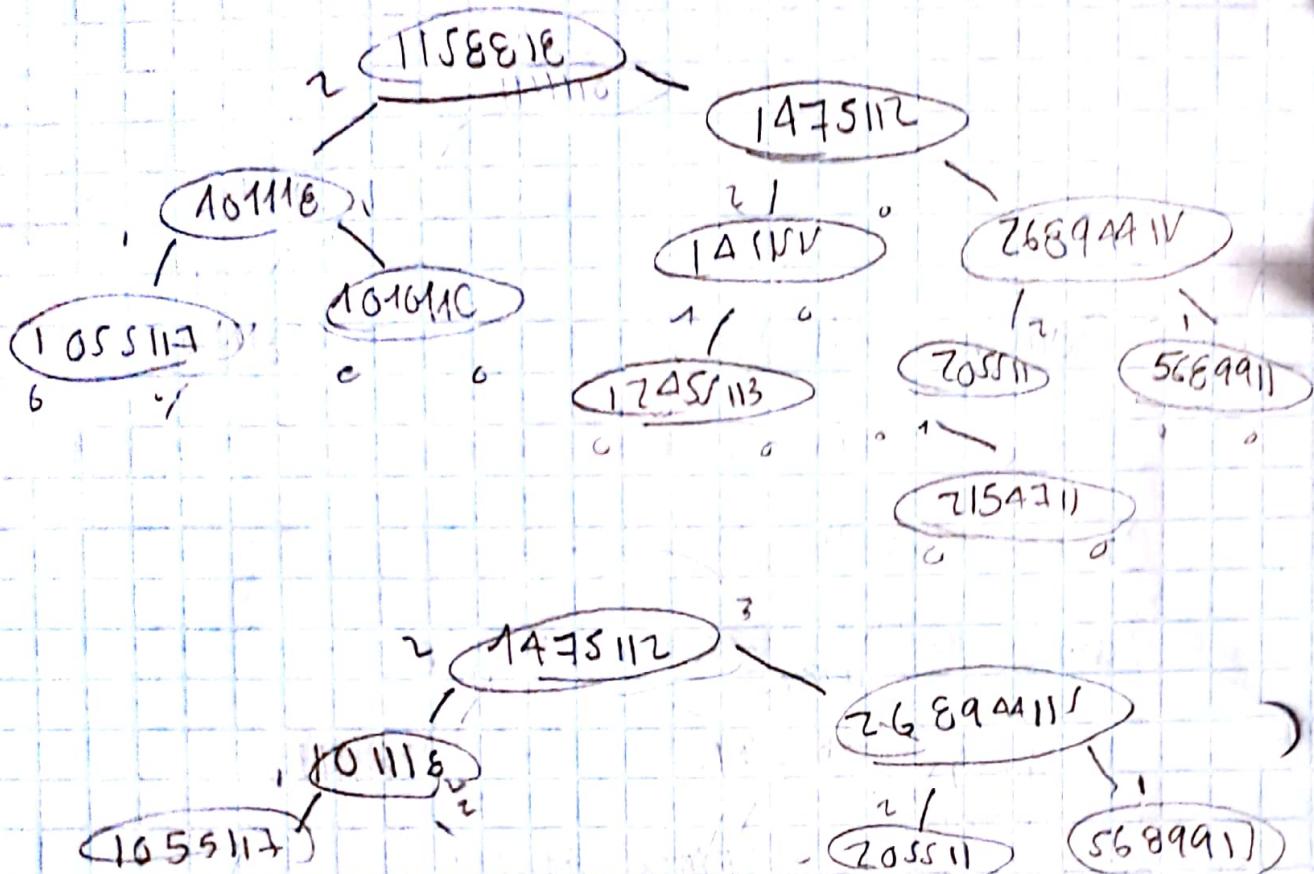
Camino 26899415 : 1118816 - 1475112 - 26899415

Serie II)

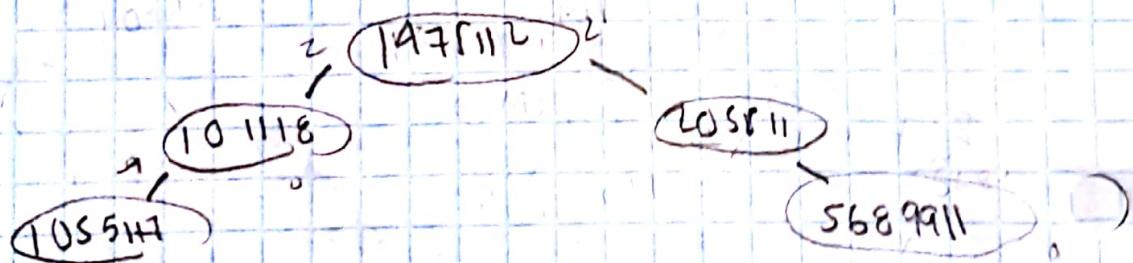
- Pre Orden: 1118816 - 1010110 - 1001110 - 1055117 - 111110 - 1475112 - 1411111 - 12455113 - 26804415 - 2005511 - 2154711 - 5689911
- In orden: 1055117 - 1001110 - 1010110 - 111110 - 1118816 - 12455113 - 1411111 - 1475112 - 2005511 - 2154711 - 26899415 - 5689911
- Post orden: 1055117 - 1011110 - 111110 - 1010110 - 12455113 - 1411111 - 2154711 - 26899415 - 5689911 - 26899415

Serie III

Eliminar 11558818



b) Eliminar 1451814, 1241117, 2154711, 2689415



b) Pre orden : 101S112 — 101116 — 105117 — 205V11 — 5689911

In orden : 105117 — 101118 — 147S112 — 205V11 — 5689911

Post orden: 105117 — 101118 — 5689911 — 205V11 — 147S112

c.) Camino 1010116 —

Camino 141511 —