Sistemas nebulosos TP2 - Parte 1

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①

Q(U,V) Muito Longe	Paris	New York
Paris	0	0,7
Beijing	0,8	0,98
Ottawa	0,6	0,15
London	0,25	0,5

R(U,W) Muito Perto	Paris	Beijing	Ottawa	London
Bruges	1	0,1	0,4	0,85
Stockholm	0,4	0,4	0,15	0,3
Moscow	0,2	0,7	0,05	0,1

L(U,V) Coll. Londrina Afins	Paris	New York
Paris	1	0,85
Beijing	0,2	0,3
Ottawa	0,6	0,8
London	0,8	0,88

a)

$M(U,V) = Q(U,V) \cap \neg L(U,V) =$

	Paris	New York
Paris	0	0,15
Beijing	0,8	0,7
Ottawa	0,4	0,15
London	0,2	0,12

$= M(U,V)$

b) $P = Q \circ R$

	Paris	New York
Bruges	V[(0;1),(0,2;0,3),(0,6;0,3),(0,25;0,2)]	V[(0,7;1),(0,38;0,1),(0,15;0,4),(0,5;0,35)]
Stockholm	V[(0;0,4),(0,8;0,4),(0,6;0,15),(0,25;0,2)]	V[(0,7;0,4),(0,38;0,4),(0,15;0,15),(0,5;0,5)]
Moscow	V[(0;0,2),(0,8;0,2),(0,6;0,05),(0,25;0,1)]	V[(0,7;0,2),(0,38;0,7),(0,15;0,05),(0,5;0,1)]

	Paris	New York
Bruges	0,24	0,7
Stockholm	0,32	0,392
Moscow	0,56	0,686

$= P = Q \circ R$

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② 1 2 3 4

1 0,5 0,4 0,2

$A \circ R$: 1 V[(1,1),(1;0,8)(1;0)(1,0)]

2 V[(0,5;0,8),(0,5;1),(0,5;0,8),(0,5;0)]

3 V[(0,4;0),(0,4;0,8),(0,4;1)(0,4;0,8]

4 V[(0,2;0)(0,2;0),(0,2;0,8),(0,2;1)]

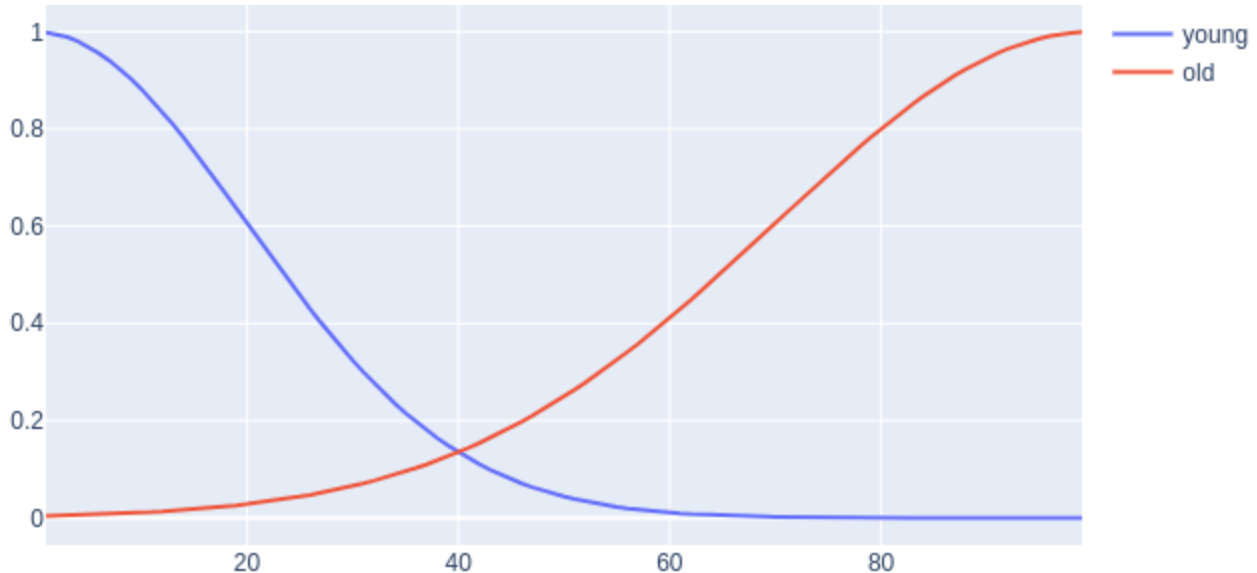
$A \circ R$ = 1 1

2 0,5

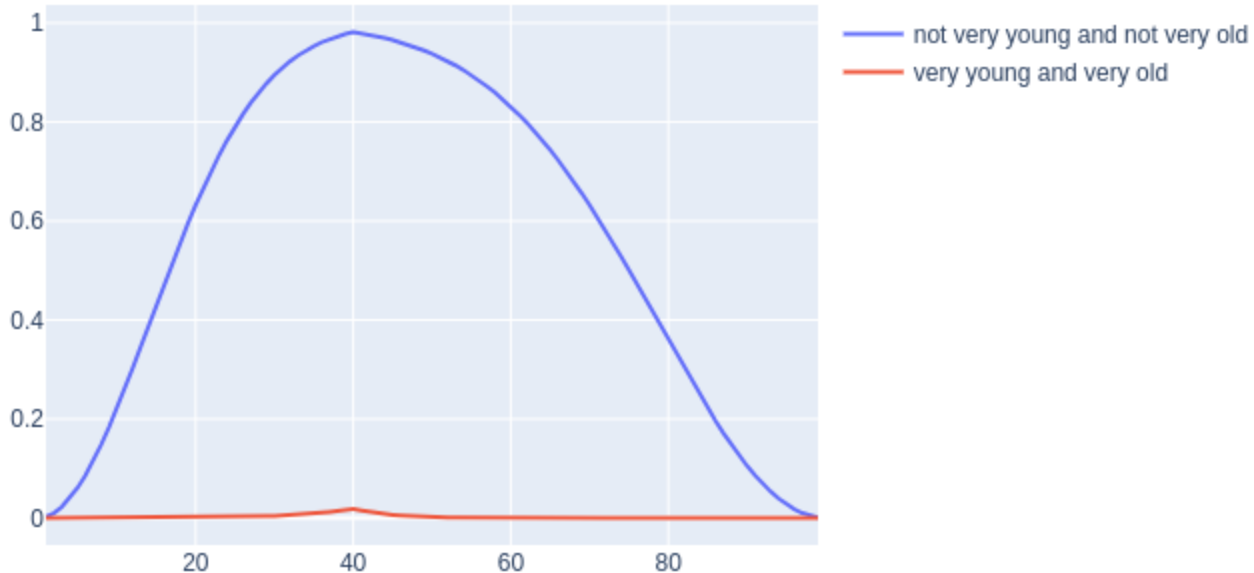
3 0,4

4 0,2

Exercício 3



Exercício 4


1
0.8
0.6
0.4
0.2
0
20
40
60
80
not very young and not very old
very young and very old

⑤

R_1 R_2

$A_1 \rightarrow B_1$, $A_2 \rightarrow B_2$, $A' \rightarrow B'$

↳ $0/x_1 + 1/x_2 + 0/x_3$

$B' = A' \circ (R_1 \cup R_2) = A' \circ R_1 \cup A' \circ R_2 = A_1' \cup A_2'$

$[\forall x (\mu_{A'}(x) \wedge \mu_{A_1}(x)) \wedge \mu_{B_1(y)}] \vee [\forall x (\mu_{A'}(x) \wedge \mu_{A_2}(x)) \wedge \mu_{B_2}(y)]$

$[0,4 \wedge [(0,1),(0,3)]] \vee [1 \wedge [(0,6),(0,2)]]$

$[(0,1),(0,3)] \vee [(0,6),(0,2)]$

$[(0,6),(0,3)]$

$B = 0,6/y_1 + 0,3/y_2$

MARKUP

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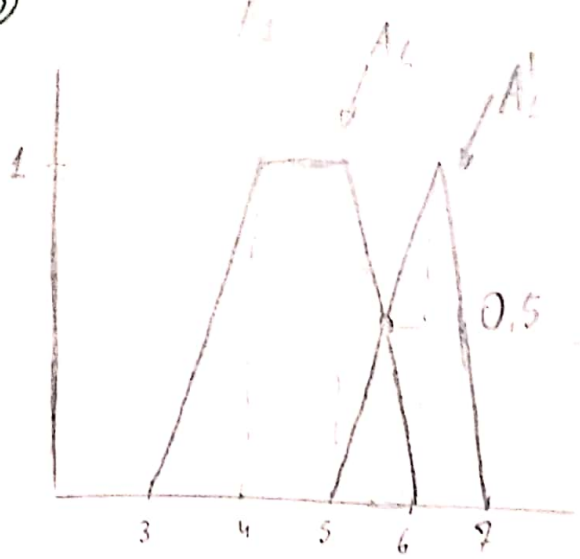

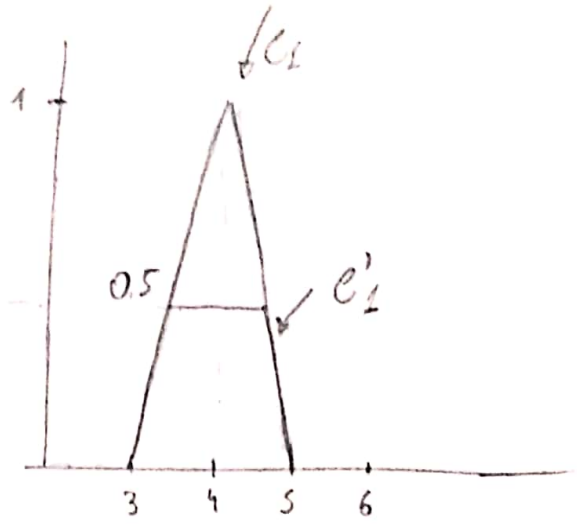

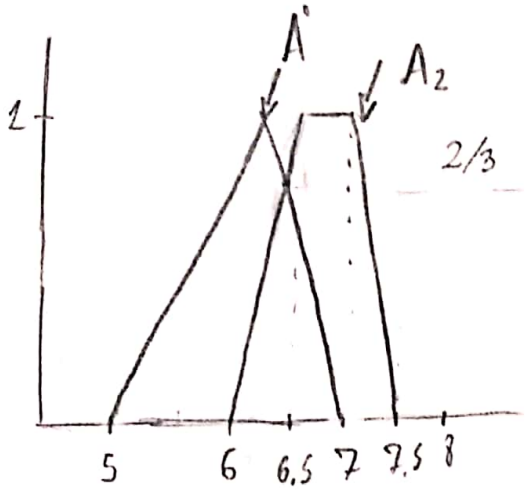

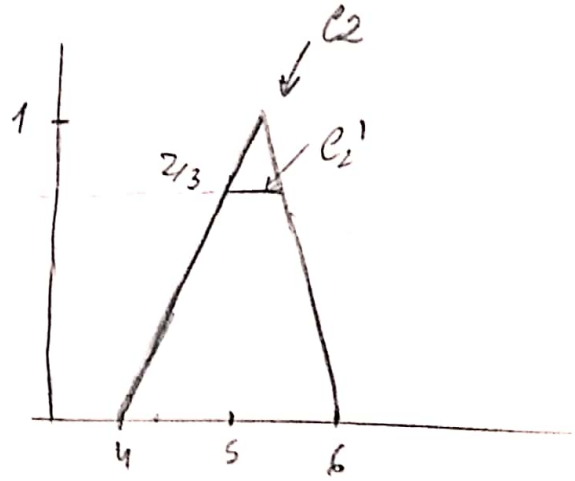

$1-x = 2x$

$x = 1/3$