**HOMEWORK 1**

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# Given set A and B as follow:

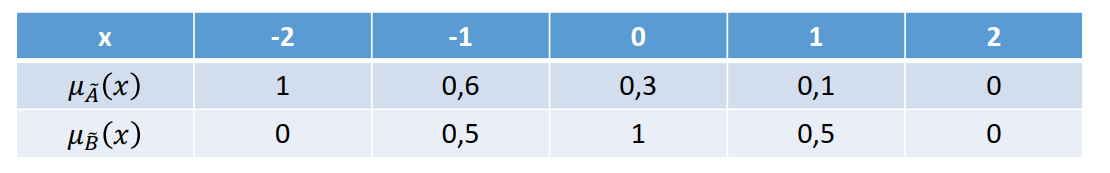


Figure : Set A and B

## Calculate 𝐴 ∩ 𝐵 using MIN and PROD

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
|  | 1 | 0.6 | 0.3 | 0.1 | 0 |
|  | 0 | 0.5 | 1 | 0.5 | 0 |
| MIN | 0 | 0.5 | 0.3 | 0.1 | 0 |
| PROD | 0 | 0.3 | 0.3 | 0.05 | 0 |

## Calculate 𝐴 ∪ 𝐵 using MAX and SUM

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
|  | 1 | 0.6 | 0.3 | 0.1 | 0 |
|  | 0 | 0.5 | 1 | 0.5 | 0 |
| Max | 1 | 0.6 | 1 | 0.5 | 0 |
| Sum | 1 | 1 | 1 | 0.6 | 0 |

# Given set A and B as follow:

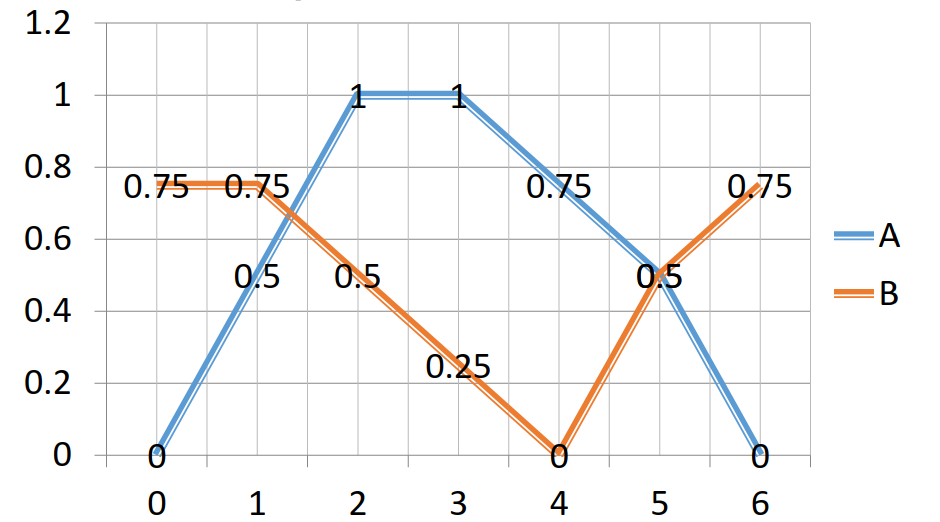


Figure : Graph A and B

## Calculate 𝐴 ∩ 𝐵 using MIN and PROD

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|  | 0 | 0.5 | 1 | 1 | 0.75 | 0.5 | 0 |
|  | 0.75 | 0.75 | 0.5 | 0.25 | 0 | 0.5 | 0.75 |
| Min | 0 | 0.5 | 0.5 | 0.25 | 0 | 0.5 | 0 |
| Prod | 0 | 0.375 | 0.5 | 0.25 | 0 | 0.25 | 0 |

## Calculate 𝐴 ∪ 𝐵 using MAX and SUM

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|  | 0 | 0.5 | 1 | 1 | 0.75 | 0.5 | 0 |
|  | 0.75 | 0.75 | 0.5 | 0.25 | 0 | 0.5 | 0.75 |
| Max | 0.75 | 0.75 | 1 | 1 | 0.75 | 0.5 | 0.75 |
| Sum | 0.75 | 1 | 1 | 1 | 0.75 | 1 | 0.75 |

# Given set A and B in X’s dimension and set C and D in Y’s dimension.

## Calculate 𝐴 ∩ 𝐵 using MIN and PROD

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
|  | 1 | 0.6 | 0.3 | 0.1 | 0 |
|  | 0 | 0.5 | 1 | 0.5 | 0 |
| MIN | 0 | 0.5 | 0.3 | 0.1 | 0 |
| PROD | 0 | 0.3 | 0.3 | 0.05 | 0 |

## Calculate 𝐴 ∩ 𝐶 using MIN and PROD

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | -2 | -1 | 0 | 1 | 2 |
| y | 1 | 2 | 3 | 4 | 5 |
|  | 1 | 0.6 | 0.3 | 0.1 | 0 |
|  | 0 | 0.5 | 1 | 1 | 0.5 |

MIN:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| y\x | -2 | -1 | 0 | 1 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0.5 | 0.5 | 0.3 | 0.1 | 0 |
| 3 | 1 | 0.6 | 0.3 | 0.1 | 0 |
| 4 | 1 | 0.6 | 0.3 | 0.1 | 0 |
| 5 | 0.5 | 0.5 | 0.3 | 0.1 | 0 |

PROD:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| y\x | -2 | -1 | 0 | 1 | 2 |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0.5 | 0.3 | 0.15 | 0.05 | 0 |
| 3 | 1 | 0.6 | 0.3 | 0.1 | 0 |
| 4 | 1 | 0.6 | 0.3 | 0.1 | 0 |
| 5 | 0.5 | 0.3 | 0.15 | 0.05 | 0 |