***FINAL PROJECT 453***

**(I) Consider a function F of 3 variables X1, X2, and X3, F(X1, X2, X3). Then:**

(a) Manually Derive the sets S1, S2, S3 for F(X1, X2, X3).

(b) How many total elements are present in each set?

(c) Manually Compute S1 U S2 U S3.

(d) How many total elements are in the union?

(e) How many unique elements are present in the union?

* Boundary Value Test Cases:

S1: <**nom**, **nom**, min>, <**nom**, **nom**, min+>, <**nom**, **nom**, **nom**>, <**nom**, **nom**, max->, <**nom**, **nom**, max>

S2: <**nom**, min, **nom**>, <**nom**, min+, **nom**>, <**nom**, **nom**, **nom**>, <**nom**, max-, **nom**>, <**nom**, max, **nom**>

S3: <min, **nom**, **nom**>, <min+, **nom**, **nom**>, <**nom**, **nom**, **nom**>, <max-, **nom**, **nom**>, <max, **nom**, **nom**>

{<**nom, nom, nom>**,<**nom**, **nom**, min>, <**nom**, **nom**, min+>, <**nom**, **nom**, max->, <**nom**, **nom**, max>, <**nom**, min, **nom**>, <**nom**, min+, **nom**> <**nom**, max-, **nom**>, <**nom**, max, **nom**>, <min, **nom**, **nom**>, <min+, **nom**, **nom**>, <max-, **nom**, **nom**>, <max, **nom**, **nom**>}

* Each Set: 5 elements
* Total Elements in The Union: 15 elements
* Total Unique Elements in The Union: 13 elements
* Robust Boundary Value Test Cases:

S1: <**nom**, **nom**, min->, <**nom**, **nom**, min>, <**nom**, **nom**, min+>, <**nom**, **nom**, **nom**>, <**nom**, **nom**, max->, <**nom**, **nom**, max>, <**nom**, **nom**, max+>

S2: <**nom**, min-, **nom**>, <**nom**, min, **nom**>, <**nom**, min+, **nom**>, <**nom**, **nom**, **nom**>, <**nom**, max-, **nom**>, <**nom**, max, **nom**>, <**nom**, max+, **nom**>

S3: <min-, **nom**, **nom**>, <min, **nom**, **nom**>, <min+, **nom**, **nom**>, <**nom**, **nom**, **nom**>, <max-, **nom**, **nom**>, <max, **nom**, **nom**>, <max+, **nom**, **nom**>

{<**nom, nom, nom>**,<**nom**, **nom**, min->, <**nom**, **nom**, min>, <**nom**, **nom**, min+>, <**nom**, **nom**, max->, <**nom**, **nom**, max>, <**nom**, **nom**, max+>, <**nom**, min-, **nom**>, <**nom**, min, **nom**>, <**nom**, min+, **nom**>, <**nom**, max-, **nom**>, <**nom**, max, **nom**>, <**nom**, max+, **nom**>, <min-, **nom**, **nom**>, <min, **nom**, **nom**>, <min+, **nom**, **nom**>, <max-, **nom**, **nom**>, <max, **nom**, **nom**>, <max+, **nom**, **nom**>}

* Each Set: 7 elements
* Total Elements in The Union: 21 elements
* Total Unique Elements in The Union: 19 elements