

DataNet Quality Systems Knowledgebase

How do I create an equation that calculates the range between three different variables?

If you have three variables ("V1", "V2", and "V3"), you can create a fourth variable ("Range") to calculate the range between the subgroups plotted for the three variables. For every set of subgroups added to "V1", "V2", and "V3", a corresponding subgroup will be calculated for the "Range" variable.

You can use the following equation to calculate the maximum of the three subgroups and the minimum of the three subgroup, which then can be used to calculate the range. This equation would be placed in the "Range" variable's equation (on the 'Settings' tab in the variable properties). The equation below also demonstrates the use of the 'If'-'Then'-'Else' logic construct and the use of temporary variables ("MyMax", "MyMin").

```
Let MyMax = 0
Let MyMin = 0
If "V1".Mean > "V2".Mean Then
MyMax = "V1".Mean
Else
MyMax = "V2".Mean
End If
If MyMax < "V3".Mean Then
MyMax = "V3".Mean
End If
If "V1".Mean < "V2".Mean Then
MyMin = "V1".Mean
Else
MyMin = "V2".Mean
End If
If MyMin > "V3".Mean Then
MyMin = "V3".Mean
End If
Result = MyMax - MyMin
```

<https://knowledgebase.winspc.com/questions/242/>