Group 9

J symbol (hash): #

Monadic case:

Name: *tally/count*
Rank: _ (infinity/unbounded) – applies to entire array
Definition: **# y** returns the *number of the items* of y.

Please also include *explanations* for your answers to some of the following questions:
What is the result when y is a vector, or a matrix?
What is the result when y is an empty vector (e.g., # 0$0), or an empty matrix (e.g., # 0 4$0)?
Why is the # 0 4$0 not the same as # 4 0$0 ?

Dyadic case:

Name: *copy*
Rank: 1 (left); _ (right) – applies to a vector on the left and the entire array on the right
Definition (scalar x): **x # y** *returns x copies of the items* of y.
Definition (vector x): **x # y** returns xi *copies* of the yi *items* of y, where i is the position of *element* in x and the item in y. (In this case, the *length* of the vector x must be the same as the *number of items* in y.) If x is a *complex number ajb*, then the result is *a* copies of item y and *b* copies of the *fill* element. The fill element is 0 for *numeric arrays*, space for *literal arrays*, and box for *box arrays*.

Please also include *explanations* for your answers to some of the following questions:
What is the result when x is a number and y is a vector?
What is the result when x is a number and y is a matrix?
What is the result when x is a vector and y is a vector?
What is the result when x is a vector and y is a matrix?
What is the result when x is a complex number?