Function Specification

Overview

The complete functional specification of the Co-Dfns compiler can be found in this document. The compiler is designed and specified using a black-box method, specifying the behavior in terms of input and stimulus histories and responses. Because we are writing a compiler and not some other system, the actual user facing toggles on the system are surprisingly small, despite the large potential for behavior. This is because the majority of input comes in the forms of programs. Therefore, in specification, it is critical to specify not only the normal user behaviors, but also the behaviors on critical abstractions of program input and form.

The compiler itself also has a tendency towards sparse responses. In traditional program design, the responses of the system would come in the form of textual, GUI, or hardware responses that had a very user visible form. In contrast, the majority of software "states" that the user can consider, when correct input is entered, should respond with no output and no response. These states are there conceptually or abstractly, rather than displaying specific outputs whenever they are entered. They cannot be elided from the function specification, however, because when input is *not* correct, then these states represent the set of possible error responses and the types of reporting that will be given in the cases where the system does not receive the intended input. Thus, these states can be considered null responses unless errors need to be considered or handled. Indeed, the majority of user visible responses in the compiler take the form of error handling responses, and the compiler is at its most quiet when all things are going as planned.

The approach to black box specification here will take this form and the nature of the visible interface of a compiler into account. We encode the input of the system at an abstraction level that lets us encode the appropriate error responses of the system and all *potential* user visible behavior of the system in response to any user alterable or user derived input, even though the majority of the time, the compiler might be quite silent. This requires an abstraction level that allows us to talk about the structure and form of the programs that are given as input into the program, but because of the nature of program text, we have chosen an abstraction level only deep enough to accurately reflect all of the possible compiler responses, and no deeper. Entering in any more precisely would defeat the purpose of the black box abstraction and would complicate the specification process beyond feasibility.

In this same vein, the abstraction of the compiler responses goes only so far as to accurately reflect the paths that may lead to semantically valuable user visible changes in response to new inputs. Responses, therefore, are equally abstract, and represent only the sufficiently clear class of errors and conceptual states that reflect the useful and meaningful external behavior of the system.

Despite the relative abstractness of this specification, however, normal, standard black box abstraction techniques and specification methods provide the same level of rigor and usefulness to the task. The methods and approaches themselves are as little refined or modified as possible, in order to make these specifications as easy to understand and as rigorous as possible, without requiring a significant programmer overhead for developing a mathematical semantics that far exceeds the desired scope of the compiler project.

All behavior here is dictated by the *Software Requirements* which in turn have the *Programmer's Guide and Language Reference* for Dyalog APL as an implicit dependency. Likewise, this specification assumes and relies on the language reference as an implicit part of this specification and will clarify behaviors not given complete treatment here. Complete treatment may not be granted here in the case that the behavior is adequately documented in the language reference.

Software Boundaries

There are two primary sources of user input. The user will first call the compiler with a given program to compile, which represents the first external input. Secondly, the compiled namespace that is created as a result will be called repeatedly and used as its own thing. This represents the second potential input to the system. These are distinct because the input given to the second, and the behavior that is appropriate to it is entirely dependent on the input that is given as the program input. Thus, it is impossible to speak directly about the kinds of inputs and their responses for the second types of input, except very broadly. Instead, the semantics are encoded in the first input, and as long as the semantics are preserved in the compiler, then it will work as intended.

Thus, the main sources of input that will be considered are the programs that are given, rather than on the inputs that will be given to the programs described or compiled. This may or may not accurately reflect how the code is used in practice. Indeed, we normally expected to compile a program once and then run it multiple times. However, most of the more useful information comes from the program input, rather than the input to the compiled program.

As a final note, we have chosen to view the LLVM as an external software artifact over which we have no control. Thus, it should be considered an external artifact. It will receive inputs from the compiler and return resulting responses that we will use to create the final compiled object.

Table 1. Summary of External Entities

Name	Notes
Source Code	Primary input source from the user; specifies semantics and intended behavior of module behavior.

Name	Notes
Compiled Module	Behavior is determined completely by the input source code, and cannot be readily specified outside of a specific input beyond summary behavior.
LLVM	External software used to build the module, consumer of inputs from the compiler and producer of compiled modules.

Stimuli and Responses

We divide the set of stimuli and responses into two sets, corresponding to the source code and the module. We will not consider the specification of the LLVM interactions, as these are internal to the system and should not be user visible. Many of these stimuli are abstract stimuli based on multiple real stimuli. Others, such as those in the module set, are abstract because we cannot encode a specific stimuli set absent a specific source input.

The stimuli for the Source Input correspond very closely to those that might be used for the tokenization of program inputs. We abstractly consider the input history for source input as first an indication of which external function was called. Then the stream of argument values must be considered. This encodes the arguments received by the `CoDfns.Fix` function. We choose to keep the filename argument as a single unit, but the source input should be separated into its various token elements corresponding to the incoming token stream that the parser will have to deal with, at least, conceptually. In particular, we are abstracting the consuming of whitespace that might appear throughout the source input.

In addition to the raw token stimuli, the processing of source code is an inherently recursive process, and thus we have a set of *recursive stimuli* which represent terms which we will define by enumeration, but that themselves are used within enumerations, possibly within itself. This allows us to encode recursive properties without bringing the recursive problems into the enumerations themselves.

Each recursive stimuli and the top-level source input have a subset of the total possible stimuli to accept as valid stimuli. All other stimuli are implicitly illegal.

Table 2. Recursive Stimuli for Source Input

Symbol	Name	Meaning
E	Expression	Any expression that evaluates to an array value
Ea	Atomic Expression	Any single, atomic Expression
Es	Selective Expression	Any valid selective assignment Expression

Symbol	Name	Meaning
Fn	Ambivelant Function	An ambivelant user-defined function
Fnm	Monadic User Operator	An user-defined monadic operator
Fnd	Dyadic User Operator	An user-defined dyadic operator
Fe	Function Expression	An expression evaluating to any function value, including operators
Fea/Feaa	Ambivalent Function Expr. (Axis)	An expression evaluating to an ambivalent function value
Fed/Feda	Dyadic Function Expr. (Axis)	An expression evaluating to a dyadic function value
Fem/Fema	Monadic Function Expr. (Axis)	An expression evaluating to an monadic-only function value
Feo[op1 op2 ...]	Operator Function Expression	An expression evaluating to an operator equivalent to op1 or op2, and so forth

All of the function stimuli may be enumerated as one, since they have the same syntax at this abstract level. When enumerating a recursive stimuli, we allow potentially any error response, as well as illegal, wait, and okay. The wait response indicates the sequence as yet is not a valid stimuli, but that it may yet become a valid sequence. The okay response indicates that the sequence as is constitutes a valid sequence, but need not be final or unextendable.

Function expressions turn out to be quite complicated in terms of their recursions and what sort of state need to be encoded, and when. For more information about these stimuli, see the section on the Function Expression enumeration.

As a rule, during enumeration, one should consider the use of a recursive stimuli illegal unless it is used to capture some nested property, or when it is used at the top-level, where no opportunity for non-termination exists. When it is used, one must carefully mark any sequence at the same level that may be a prefix of the enumeration of the recursive stimuli as subsumed by said stimuli. A prefix must have the same response to be a prefix. If a stimuli might pair up with another token, they cannot cross enumeration depths or levels, but much pair against one another in the same level. That is, a top-level (may not be closed in a recursive stimuli. The intent is to make each enumeration as self-contained as possible, and to make sure that nested recursion other than tail recursion is marked by the use of recursive stimuli, rather than trying to handle that recursion through enumeration.

Table 3. Stimuli for Source Input

Symbol	Name	Meaning
{	Left Brace	A left brace token

Symbol	Name	Meaning
}	Unbalanced Right Brace	A right brace token
[	Left Bracket	A left bracket token
]	Right Bracket	A right bracket token
(	Left Parenthesis	A left parenthesis token
)	Right Parenthesis	A right parenthesis token
;	Index Separator	The index separator for bracket indexing
:	Conditional	The conditional token
::	Error Guard	The error guard token
⋄	Statement Separator	Statement separtor token
←	Assignment	An assignment token
⍨	Commute Operator	The Commute Operator
∘	Compose Operator	The Compose Operator
¨	Each Operator	The Each Operator
.	Product Operator	The Product Operator
⍣	Power Operator	The Power Operator
/	Reduce Operator	The Reduce Operator
⌿	First Reduce Operator	The First-axis Reduce Operator
\	Scan Operator	The Scan Operator
⍀	First Scan Operator	The First-axis Scan Operator
Break	Interrupt/Break	User signalled interrupt
D	Dyadic Primitive	A primitive function that can only be called dyadically.
Da	Dyadic Axis Primitive	A primitive function that can only be called dyadically. Valid with the Axis Operator.
Eot	End of Transmission	The end of the input to the compiler
Fix	Call `Fix`	A call to the `Fix` function, arguments to follow.
Fnb	Bad Filename	A pathname that is somehow an invalid syntax or otherwise invalid to be used as a pathname.
Fne	Empty Filename	A filename/pathname that specifies a file that does not yet exist.
Fnf	Found Filename	A filename that specifies a file that already exists in the filesystem.

Symbol	Name	Meaning
Lle	LLVM Error	Any LLVM derived error
Lls	LLVM Success	Any LLVM derived success
M	Monadic Primitive	A primtive function that can be called monadically.
Ma	Monadic Axis Primitive	A primtive function that can be called monadically. Valid with Axis Operator.
N	Literal Number	A valid, literal number
Nl	Newline	A newline character of some sort
Nse	Namespace End	The ending token for a namespace script, usually `:EndNamespace`.
Nss	Namespace Start	The starting token for a namespace script, usually `:Namespace`.
S	String	A literal character array string
Sm	Monadic Selector	A monadic primitive suitable for selective assignment
Sd	Dyadic Selector	A dyadic primitive suitable for selective assignment
Va	Array Variable	A variable bound to an array
Vna	Array Variable	A nested array variable expression with no unbound variables
Vi	Illegal Variable	A variable occurring in an illegal context
Vf	Function Variable	A variable bound to a function
Vfo	Function/Operator Variable	A variable bound to a function or operator
Vo[op]	Operator Variable	A variable bound to an operator equivalent to `op`
Vnu	Unbound Nested Variable	A nested variable expression that has some unbound variables
Vu	Unbound Variable	A variable that has not been bound

Each of the enumeration targets has a set of stimuli that are valid. Alll other stimuli are illegal. These are chosen because any possible occurance of another stimuli in the enumeration ought to be subsumed by one of the other recursive stimuli. This helps to quell any complexity that may occur in enumerating everything out long hand.

Table 4. Enumeration Stimuli Sets for Recursive Stimuli

Enumeration	Stimuli Set
Top-level	⋄ ← Break Eot Fix Fnb Fne Fnf Lle Lls Nl Nse Nss Vi Vfo Vu E Fe Fnm Fnd
Expressions	[ ] ( ) ; ← Break N S Sm Sd Va Vna Vi Vnu E Es Fea Fed Fem
Functions	{ } : :: ⋄ ← Break Nl Vi Vfo Vu E Fe Fnm Fnd
Func. Expr.	[ ] ( ) ← ⍨ ∘ ¨ . ⍣ / ⌿ \ ⍀ Break D Da M Ma Vi Vf Vo Vu E Ea Fea(a) Fed(a) Fem(a) Feo Fn Fnm Fnd

We have chosen to encode our compiler responses based primarily on the class of the response. In cases of success, we have a single response; all our other responses classify various types of error cases. We choose to go no further than is necessary to distinguish user visible errors types. We do not include source input location in our error responses, but it is assumed to exist in the output if reasonably feasible. We further assume that all intermediate internal states not producing user visible output will have no explicit output responses, despite representing the majority of states in the system. Each error state corresponds to a specific error code reported by the Dyalog interpreter. We include only the error codes produced by the compiler and not errors occuring only at runtime.

Table 5. Responses for Source Input

Code	Name	Meaning
11	Domain Error	Indicates compiler detected domain error
22	File Name Error	When a file matching the pathname for the shared object exists already
34	File System No Space	Attempting a file operation failed because of insufficient space
3	Index Error	Compiler detected an out of bounds index operation
99	Internal Error	Internal system error; may indicate LLVM error
1003	Interrupt	Received a system interrupt indicating an immediate exit
5	Length Error	Compiler has detected a shape mismatch but not a rank error
10	Limit Error	A system limitation has been encountered
16	Nonce Error	Unimplemented feature reserved for future use
4	Rank Error	Compiler has detected a rank error of an argument

Code	Name	Meaning
2	Syntax Error	Compiler has encountered a line that is not a meaningful statement
6	Value Error	The compiler has found a reference to an unbound variable or a function call returning no result where one was expected
1	Ws Full	The compiler has run out of memory
N/A	Namespace	Indicates a successful execution of the compiler and the return of a semantically equivalent namespace

After a module is compiled, it is usually invoked and executed in various ways. We separate compilation from invocation so that we may enumerate their sequence histories separately, but also because the stimuli are encoded so differently. Most Source Input stimuli are rather close to some specific concrete token that is not defined in terms of anything else, but the corresponding concrete stimuli for a Module Invocation stimulus is always dependent on a specific module. Very few, if any, stimuli will be very concrete. Each stimulus history should have few tokens, as we are representing function calls. We note that all functions are ambivalent when written in Co-Dfns.

Table 6. Stimuli for Module Invocation

Symbol	Name	Description
Fv	Valid Function	A valid reference to a function in the module
Var	Bound Variable	A valid reference to an array in the module
Ub	Unbound reference	A reference to an unbound variable in the module
In	Valid input	Input to a function that will not lead to a runtime error
Err	Erroneous input	Input to a function that will lead to an unguarded runtime error
Call	Function call	Either a monadic or dyadic call to a module function

Our responses when calling or referencing into a compiled module are much more abstract than our responses for the compiler, particularly so for the error responses. This is necessary simply because we cannot know ahead of time what inputs will generate what errors. Instead, we make our responses very abstract. We assume that when actually programmed, the runtime errors will correspond to the appropriate code and signal. The same goes for correct, or valid, input. We must abstract away

until we can only say that the output is equivalent to the result of the same function interpreted instead of a fixed or actual value.

Table 7. Responses for Module Invocation

Name	Description
Value	A value returned by module that is equivalent ot the value returned by an equivalent interpreted module invocation
Value Error	An error signalled when a reference to an unbound variable occurs.
Error	Any runtime error signalled by erroneous input to a module invocation. Must be the same error as would be signalled by an equivalent interpreted module invocation.

Sequence Enumeration

The following tables provide a complete sequence enumeration of the compiler. We begin at the top-level enumeration and work our way down throughout each of the recursive stimuli. Recall that we do not need to enumerate each of the function stimuli separately, as they all have the same syntax at this level of abstraction. In particular, the Vi stimuli encodes whether or not the various αα or ωω variables are visible at any given time.

Source Input Enumeration

The enumeration of the source input boundary (the main compiler interface) is divided into the enumeration of the top-level, the function enumeration, the expressions, and function expressions.

Top-level Enumeration

The following tables enumerate the behavior of the compiler along the source input boundary starting at the top-level; that is, it enumerates them at the highest level, and does not enumerate or specify the behavior of any of the recursive stimuli, except implicitly through subsumptions.

Table 8. Source Input Enumeration: Top-level

Sequence	Response	Equivalent	Trace
E	illegal		D1
Fe	illegal		D1
Fnd	illegal		D1
Fnm	illegal		D1
◇	illegal		D1

Sequence	Response	Equivalent	Trace
←	illegal		D1
Break	illegal		D1
Eot	illegal		D1
Fix	null		4, 15, D1
Fnb	illegal		D1
Fne	illegal		D1
Fnf	illegal		D1
Lle	illegal		D1
Lls	illegal		D1
Nl	illegal		D1
Nse	illegal		D1
Nss	illegal		D1
Vi	illegal		D1
Vfo	illegal		D1
Vu	illegal		D1

Table 9. Source Input Enumeration: Top-level, Fix

Sequence	Response	Equivalent	Trace
Fix E	Syntax Error	empty	4, 10, 16, 21
Fix Fe	Syntax Error	empty	4, 10, 16, 21
Fix Fnd	Syntax Error	empty	4, 10, 16, 21
Fix Fnm	Syntax Error	empty	4, 10, 16, 21
Fix ◇	Syntax Error	empty	4, 10, 16, 21
Fix ←	Syntax Error	empty	4, 10, 16, 21
Fix Break	Interrupt	empty	D3
Fix Eot	Syntax Error	empty	4, 10, 16, 21
Fix Fix	illegal		
Fix Fnb	Domain Error	empty	D2
Fix Fne	null		17, 21
Fix Fnf	File Name Error	empty	30
Fix Lle	illegal		
Fix Lls	illegal		
Fix Nl	null	Fix Fne	4, 10, 16, 21

Sequence	Response	Equivalent	Trace
Fix Nse	Syntax Error	empty	4, 10, 16, 21
Fix Nss	null		4, 16, 21
Fix Vi	Syntax Error	empty	4, 10, 16, 21
Fix Vfo	Syntax Error	empty	4, 10, 16, 21
Fix Vu	Syntax Error	empty	4, 10, 16, 21

Table 10. Source Input Enumeration: Top-level, Fix Fne

Sequence	Response	Equivalent	Trace
Fix Fne E	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Fe	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Fnd	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Fnm	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne ◊	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne ←	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Break	Interrupt	empty	D3
Fix Fne Eot	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Fix	illegal		
Fix Fne Fnb	illegal		
Fix Fne Fne	illegal		
Fix Fne Fnf	illegal		
Fix Fne Lle	illegal		
Fix Fne Lls	illegal		
Fix Fne Nl	null	Fix Fne	4, 17, 18, 21
Fix Fne Nse	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Nss	null	Fix Nss	4, 17, 18, 21
Fix Fne Vi	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Vfo	Syntax Error	empty	4, 10, 17, 18, 21
Fix Fne Vu	Syntax Error	empty	4, 10, 17, 18, 21

Table 11. Source Input Enumeration: Top-level, Fix Nss

Sequence	Response	Equivalent	Trace
Fix Nss E	null		4, 16
Fix Nss Fe	null		4, 16

Sequence	Response	Equivalent	Trace
Fix Nss Fnd	null	Fix Nss Fe	4, 16
Fix Nss Fnm	null	Fix Nss Fe	4, 16
Fix Nss ◇	null	Fix Nss	4, 16
Fix Nss ←	Syntax Error	empty	4, 10, 16, 21
Fix Nss Break	Interrupt	empty	D3
Fix Nss Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Fix	illegal		
Fix Nss Fnb	illegal		
Fix Nss Fne	illegal		
Fix Nss Fnf	illegal		
Fix Nss Lle	illegal		
Fix Nss Lls	illegal		
Fix Nss Nl	null	Fix Nss	4, 16
Fix Nss Nse	null		4, 16
Fix Nss Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vi	Syntax Error	empty	4, 10
Fix Nss Vfo	null		4, 10
Fix Nss Vu	null		4, 10

Table 12. Source Input Enumeration: Top-level, Fix Nss E

Sequence	Response	Equivalent	Trace
Fix Nss E E	subsumed	Fix Nss E	
Fix Nss E Fe	subsumed	Fix Nss E	
Fix Nss E Fnd	subsumed	Fix Nss E	
Fix Nss E Fnm	subsumed	Fix Nss E	
Fix Nss E ◇	null	Fix Nss	4, 16
Fix Nss E ←	subsumed	Fix Nss E	
Fix Nss E Break	Interrupt	empty	D3
Fix Nss E Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss E Fix	illegal		
Fix Nss E Fnb	illegal		
Fix Nss E Fne	illegal		
Fix Nss E Fnf	illegal		

Sequence	Response	Equivalent	Trace
Fix Nss E Lle	illegal		
Fix Nss E Lls	illegal		
Fix Nss E Nl	null	Fix Nss	4, 16
Fix Nss E Nse	null	Fix Nss Nse	4, 16
Fix Nss E Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss E Vi	subsumed	Fix Nss E	
Fix Nss E Vfo	subsumed	Fix Nss E	
Fix Nss E Vu	subsumed	Fix Nss E	

Table 13. Source Input Enumeration: Top-level, Fix Nss Fe

Sequence	Response	Equivalent	Trace
Fix Nss Fe E	subsumed	Fix Nss E	
Fix Nss Fe Fe	subsumed	Fix Nss E	
Fix Nss Fe Fnd	subsumed	Fix Nss E	
Fix Nss Fe Fnm	subsumed	Fix Nss E	
Fix Nss Fe ◇	null	Fix Nss	4, 16
Fix Nss Fe ←	subsumed	Fix Nss E	
Fix Nss Fe Break	Interrupt	empty	D3
Fix Nss Fe Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Fe Fix	illegal		
Fix Nss Fe Fnb	illegal		
Fix Nss Fe Fne	illegal		
Fix Nss Fe Fnf	illegal		
Fix Nss Fe Lle	illegal		
Fix Nss Fe Lls	illegal		
Fix Nss Fe Nl	null	Fix Nss	4, 16
Fix Nss Fe Nse	null	Fix Nss Nse	4, 16
Fix Nss Fe Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Fe Vi	subsumed	Fix Nss E	
Fix Nss Fe Vfo	subsumed	Fix Nss E	
Fix Nss Fe Vu	subsumed	Fix Nss E	

Table 14. Source Input Enumeration: Top-level, Fix Nss Vfo

Sequence	Response	Equivalent	Trace
Fix Nss Vfo E	subsumed	Fix Nss E	
Fix Nss Vfo Fe	subsumed	Fix Nss E	
Fix Nss Vfo Fnd	subsumed	Fix Nss Fe	
Fix Nss Vfo Fnm	subsumed	Fix Nss Fe	
Fix Nss Vfo ◇	null	Fix Nss	4, 16
Fix Nss Vfo ←	null		4, 10
Fix Nss Vfo Break	Interrupt	empty	D3
Fix Nss Vfo Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo Fix	illegal		
Fix Nss Vfo Fnb	illegal		
Fix Nss Vfo Fne	illegal		
Fix Nss Vfo Fnf	illegal		
Fix Nss Vfo Lle	illegal		
Fix Nss Vfo Lls	illegal		
Fix Nss Vfo Nl	null	Fix Nss	4, 16
Fix Nss Vfo Nse	null	Fix Nss Nse	4, 16
Fix Nss Vfo Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo Vi	subsumed	Fix Nss E	
Fix Nss Vfo Vfo	subsumed	Fix Nss E	
Fix Nss Vfo Vu	subsumed	Fix Nss E	

Table 15. Source Input Enumeration: Top-level, Fix Nss Vu

Sequence	Response	Equivalent	Trace
Fix Nss Vu E	subsumed	Fix Nss E	
Fix Nss Vu Fe	subsumed	Fix Nss E	
Fix Nss Vu Fnd	subsumed	Fix Nss E	
Fix Nss Vu Fnm	subsumed	Fix Nss E	
Fix Nss Vu ◇	Value Error	empty	4, 10, 16, 21
Fix Nss Vu ←	null		4, 10
Fix Nss Vu Break	Interrupt	empty	D3
Fix Nss Vu Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu Fix	illegal		

Sequence	Response	Equivalent	Trace
Fix Nss Vu Fnb	illegal		
Fix Nss Vu Fne	illegal		
Fix Nss Vu Fnf	illegal		
Fix Nss Vu Lle	illegal		
Fix Nss Vu Lls	illegal		
Fix Nss Vu Nl	Value Error	empty	4, 10, 16, 21
Fix Nss Vu Nse	Value Error	empty	4, 10, 16, 21
Fix Nss Vu Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu Vi	subsumed	Fix Nss E	
Fix Nss Vu Vfo	subsumed	Fix Nss E	
Fix Nss Vu Vod	subsumed	Fix Nss E	
Fix Nss Vu Vu	subsumed	Fix Nss E	

Table 16. Source Input Enumeration: Top-level, Fix Nss Nse

Sequence	Response	Equivalent	Trace
Fix Nss Nse E	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Fe	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Fnd	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Fnm	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse ◇	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse ←	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Break	Interrupt	empty	D3
Fix Nss Nse Eot	null		4, 16, 21
Fix Nss Nse Fix	illegal		
Fix Nss Nse Fnb	illegal		
Fix Nss Nse Fne	illegal		
Fix Nss Nse Fnf	illegal		
Fix Nss Nse Lle	illegal		
Fix Nss Nse Lls	illegal		
Fix Nss Nse Nl	null	Fix Nss Nse	4, 16, 21
Fix Nss Nse Nse	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Vi	Syntax Error	empty	4, 10, 16, 21

Sequence	Response	Equivalent	Trace
Fix Nss Nse Vfo	Syntax Error	empty	4, 10, 16, 21
Fix Nss Nse Vu	Syntax Error	empty	4, 10, 16, 21

Table 17. Source Input Enumeration: Top-level, Fix Nss Nse Eot

Sequence	Response	Equivalent	Trace
Fix Nss Nse Eot E	illegal		
Fix Nss Nse Eot Fe	illegal		
Fix Nss Nse Eot Fnd	illegal		
Fix Nss Nse Eot Fnm	illegal		
Fix Nss Nse Eot ◇	illegal		
Fix Nss Nse Eot ←	illegal		
Fix Nss Nse Eot Break	Interrupt	empty	D3
Fix Nss Nse Eot Eot	illegal		
Fix Nss Nse Eot Fix	illegal		
Fix Nss Nse Eot Fnb	illegal		
Fix Nss Nse Eot Fne	illegal		
Fix Nss Nse Eot Fnf	illegal		
Fix Nss Nse Eot Lle	Internal Error	empty	D4
Fix Nss Nse Eot Lls	Namespace	empty	4, 16, 21
Fix Nss Nse Eot Nl	illegal		
Fix Nss Nse Eot Nse	illegal		
Fix Nss Nse Eot Nss	illegal		
Fix Nss Nse Eot Vi	illegal		
Fix Nss Nse Eot Vfo	illegal		
Fix Nss Nse Eot Vu	illegal		

Table 18. Source Input Enumeration: Top-level, Fix Nss Vfo ←

Sequence	Response	Equivalent	Trace
Fix Nss Vfo ← E	Syntax Error	empty	4, 10, 35
Fix Nss Vfo ← Fe	null		4
Fix Nss Vfo ← Fnd	null	Fix Nss Vfo ← Fe	4
Fix Nss Vfo ← Fnm	null	Fix Nss Vfo ← Fe	4
Fix Nss Vfo ← ◇	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fix Nss Vfo ← ←	Syntax Error	empty	4, 10
Fix Nss Vfo ← Break	Interrupt	empty	D3
Fix Nss Vfo ← Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Fix	illegal		
Fix Nss Vfo ← Fnb	illegal		
Fix Nss Vfo ← Fne	illegal		
Fix Nss Vfo ← Fnf	illegal		
Fix Nss Vfo ← Lle	illegal		
Fix Nss Vfo ← Lls	illegal		
Fix Nss Vfo ← Nl	Syntax Error	empty	4, 10
Fix Nss Vfo ← Nse	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Vi	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Vfo	null	Fix Nss Vfo	4
Fix Nss Vfo ← Vu	null		4

Table 19. Source Input Enumeration: Top-level, Fix Nss Vu ←

Sequence	Response	Equivalent	Trace
Fix Nss Vu ← E	subsumed	Fix Nss E	
Fix Nss Vu ← Fe	null		4
Fix Nss Vu ← Fnd	null	Fix Nss Vu ← Fe	4
Fix Nss Vu ← Fnm	null	Fix Nss Vu ← Fe	4
Fix Nss Vu ← ◇	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← ←	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← Break	Interrupt	empty	D3
Fix Nss Vu ← Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← Fix	illegal		
Fix Nss Vu ← Fnb	illegal		
Fix Nss Vu ← Fne	illegal		
Fix Nss Vu ← Fnf	illegal		
Fix Nss Vu ← Lle	illegal		
Fix Nss Vu ← Lls	illegal		
Fix Nss Vu ← Nl	Syntax Error	empty	4, 10, 16, 21

Sequence	Response	Equivalent	Trace
Fix Nss Vu ← Nse	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← Vi	subsumed	Fix Nss Vu ← E	
Fix Nss Vu ← Vfo	null	Fix Nss Vfo	4
Fix Nss Vu ← Vu	null	Fix Nss Vu	4

Table 20. Source Input Enumeration: Top-level, Fix Nss Vfo ← Fe

Sequence	Response	Equivalent	Trace
Fix Nss Vfo ← Fe E	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Fe Fe	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Fe Fnd	subsumed	Fix Nss Vfo ← Fe	
Fix Nss Vfo ← Fe Fnm	subsumed	Fix Nss Vfo ← Fe	
Fix Nss Vfo ← Fe ◇	null	Fix Nss	4, 10
Fix Nss Vfo ← Fe ←	subsumed	Fix Nss Vfo ← Fe	
Fix Nss Vfo ← Fe Break	Interrupt	empty	D3
Fix Nss Vfo ← Fe Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Fe Fix	illegal		
Fix Nss Vfo ← Fe Fnb	illegal		
Fix Nss Vfo ← Fe Fne	illegal		
Fix Nss Vfo ← Fe Fnf	illegal		
Fix Nss Vfo ← Fe Lle	illegal		
Fix Nss Vfo ← Fe Lls	illegal		
Fix Nss Vfo ← Fe Nl	null	Fix Nss	4, 10
Fix Nss Vfo ← Fe Nse	null	Fix Nss Nse	4, 10
Fix Nss Vfo ← Fe Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Fe Vi	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Fe Vfo	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Fe Vu	subsumed	Fix Nss Vfo ← E	

Table 21. Source Input Enumeration: Top-level, Fix Nss Vfo ← Vu

Sequence	Response	Equivalent	Trace
Fix Nss Vfo ← Vu E	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Vu Fe	subsumed	Fix Nss Vfo ← E	

Sequence	Response	Equivalent	Trace
Fix Nss Vfo ← Vu Fnd	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Vu Fnm	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Vu ◇	Value Error	empty	4, 10
Fix Nss Vfo ← Vu ←	null	Fix Nss Vfo ←	4, 10, 35
Fix Nss Vfo ← Vu Break	Interrupt	empty	D3
Fix Nss Vfo ← Vu Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Vu Fix	illegal		
Fix Nss Vfo ← Vu Fnb	illegal		
Fix Nss Vfo ← Vu Fne	illegal		
Fix Nss Vfo ← Vu Fnf	illegal		
Fix Nss Vfo ← Vu Lle	illegal		
Fix Nss Vfo ← Vu Lls	illegal		
Fix Nss Vfo ← Vu Nl	Value Error	empty	4, 10
Fix Nss Vfo ← Vu Nse	Value Error	empty	4, 10
Fix Nss Vfo ← Vu Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vfo ← Vu Vi	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Vu Vfo	subsumed	Fix Nss Vfo ← E	
Fix Nss Vfo ← Vu Vu	subsumed	Fix Nss Vfo ← E	

Table 22. Source Input Enumeration: Top-level, Fix Nss Vu ← Fe

Sequence	Response	Equivalent	Trace
Fix Nss Vu ← Fe E	subsumed	Fix Nss E	
Fix Nss Vu ← Fe Fe	subsumed	Fix Nss E	
Fix Nss Vu ← Fe Fnd	subsumed	Fix Nss Vu ← Fe	
Fix Nss Vu ← Fe Fnm	subsumed	Fix Nss Vu ← Fe	
Fix Nss Vu ← Fe ◇	null	Fix Nss	4, 10
Fix Nss Vu ← Fe ←	subsumed	Fix Nss Vu ← E	
Fix Nss Vu ← Fe Break	Interrupt	empty	D3
Fix Nss Vu ← Fe Eot	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← Fe Fix	illegal		
Fix Nss Vu ← Fe Fnb	illegal		
Fix Nss Vu ← Fe Fne	illegal		
Fix Nss Vu ← Fe Fnf	illegal		

Sequence	Response	Equivalent	Trace
Fix Nss Vu ← Fe Lle	illegal		
Fix Nss Vu ← Fe Lls	illegal		
Fix Nss Vu ← Fe Nl	null	Fix Nss	4, 10
Fix Nss Vu ← Fe Nse	null	Fix Nss Nse	4, 10
Fix Nss Vu ← Fe Nss	Syntax Error	empty	4, 10, 16, 21
Fix Nss Vu ← Fe Vi	subsumed	Fix Nss Vu ← E	
Fix Nss Vu ← Fe Vfo	subsumed	Fix Nss Vu ← E	
Fix Nss Vu ← Fe Vod	subsumed	Fix Nss Vu ← Fe	
Fix Nss Vu ← Fe Vu	subsumed	Fix Nss Vu ← E	

Function Enumeration

The recursive function stimuli are abstract stimuli that represent the user-defined functions and the syntax for user defined functions, including dyadic and monadic operators. Since they share the same syntax at a high-level, we can describe them through a single enumeration, relying on the Vi stimuli to encapsulate the differences between them and hide that away.

Table 23. Source Input Enumeration: Functions

Sequence	Response	Equivalent	Trace
E	illegal		
Fe	illegal		
Fnd	illegal		
Fnm	illegal		
{	wait		4
}	Syntax Error	empty, top-level	4, 10
:	Syntax Error	empty, top-level	4, 10
::	Syntax Error	empty, top-level	4, 10
◇	Syntax Error	empty	4, 10
←	Syntax Error	empty, top-level	4, 10
Break	Interrupt	empty, top-level	D3
Nl	Syntax Error	empty	4, 10
Vfo	Syntax Error	empty	4, 10
Vu	Syntax Error	empty	4, 10

Table 24. Source Input Enumeration: Functions, {

Sequence	Response	Equivalent	Trace
{ E	wait		4
{ Fe	subsumed	{ E	
{ Fnd	subsumed	{ E	
{ Fnm	subsumed	{ E	
{ {	subsumed	{ E	4
{ }	okay	Fe	4
{ :	Syntax Error	empty, top-level	4, 10
{ ::	Syntax Error	empty, top-level	4, 10
{ ◇	wait	{	4
{ ←	Syntax Error	empty, top-level	4, 10
{ Break	Interrupt	empty, top-level	D3
{ Nl	wait	{	4
{ Vfo	wait		4
{ Vu	wait		4

Table 25. Source Input Enumeration: Functions, { E

Sequence	Response	Equivalent	Trace
{ E E	subsumed	{ E	
{ E Fe	subsumed	{ E	
{ E Fnd	subsumed	{ E	
{ E Fnm	subsumed	{ E	
{ E {	subsumed	{ E	
{ E }	okay	Fe	4
{ E :	wait		4
{ E ::	wait	{ E :	4
{ E ◇	wait	{	4
{ E ←	subsumed	{ E	
{ E Break	Interrupt	empty	D3
{ E Nl	wait	{	4
{ E Vfo	subsumed	{ E	
{ E Vu	subsumed	{ E	

Table 26. Source Input Enumeration: Functions, { Vfo

Sequence	Response	Equivalent	Trace
{ Vfo E	subsumed	{ E	
{ Vfo Fe	subsumed	{ E	
{ Vfo Fnd	subsumed	{ E	
{ Vfo Fnm	subsumed	{ E	
{ Vfo {	subsumed	{ Vfo Fe	
{ Vfo }	Syntax Error	empty, top-level	4, 10
{ Vfo :	Syntax Error	empty, top-level	4, 10
{ Vfo ::	Syntax Error	empty, top-level	4, 10
{ Vfo ◇	Syntax Error	empty, top-level	4, 10
{ Vfo ←	wait		4
{ Vfo Break	Interrupt	empty, top-level	D3
{ Vfo Nl	Syntax Error	empty, top-level	4, 10
{ Vfo Vfo	subsumed	{ E	
{ Vfo Vu	subsumed	{ E	

Table 27. Source Input Enumeration: Functions, { Vu

Sequence	Response	Equivalent	Trace
{ Vu E	subsumed	{ E	
{ Vu Fe	subsumed	{ E	
{ Vu Fnd	subsumed	{ E	
{ Vu Fnm	subsumed	{ E	
{ Vu {	subsumed	{ Vu Fe	
{ Vu }	Value Error	empty, top-level	4, 10
{ Vu :	Value Error	empty, top-level	4, 10
{ Vu ::	Value Error	empty, top-level	4, 10
{ Vu ◇	Value Error	empty, top-level	4, 10
{ Vu ←	wait		4
{ Vu Break	Interrupt	empty, top-level	D3
{ Vu Nl	Value Error	empty, top-level	4, 10
{ Vu Vfo	subsumed	{ E	
{ Vu Vu	subsumed	{ E	

Table 28. Source Input Enumeration: Functions, { E :

Sequence	Response	Equivalent	Trace
{ E : E	wait		4
{ E : Fe	subsumed	{ E : E	
{ E : Fnd	subsumed	{ E : E	
{ E : Fnm	subsumed	{ E : E	
{ E : {	subsumed	{ E : Fe	
{ E : }	okay	Fe	4
{ E : :	Syntax Error	empty	4, 10
{ E : ::	Syntax Error	empty	4, 10
{ E : ◊	wait	{	4
{ E : ←	Syntax Error	empty	4, 10
{ E : Break	Interrupt	empty	D3
{ E : Nl	wait	{	4
{ E : Vfo	subsumed	{ E : E	
{ E : Vu	subsumed	{ E : E	

Table 29. Source Input Enumeration: Functions, { Vfo ←

Sequence	Response	Equivalent	Trace
{ Vfo ← E	Syntax Error	empty, top-level	4, 10
{ Vfo ← Fe	wait		4
{ Vfo ← Fnd	wait	{ Vfo ← Fe	4
{ Vfo ← Fnm	wait	{ Vfo ← Fe	4
{ Vfo ← {	subsumed	{ Vfo ← Fe	
{ Vfo ← }	Syntax Error	empty, top-level	4, 10
{ Vfo ← :	Syntax Error	empty, top-level	4, 10
{ Vfo ← ::	Syntax Error	empty, top-level	4, 10
{ Vfo ← ◊	Syntax Error	empty, top-level	4, 10
{ Vfo ← ←	Syntax Error	empty, top-level	4, 10
{ Vfo ← Break	Interrupt	empty, top-level	D3
{ Vfo ← Nl	Syntax Error	empty, top-level	4, 10
{ Vfo ← Vfo	wait		4
{ Vfo ← Vu	wait		

Table 30. Source Input Enumeration: Functions, { Vu ←

Sequence	Response	Equivalent	Trace
{ Vu ← E	subsumed	{ E	
{ Vu ← Fe	wait		4
{ Vu ← Fnd	wait	{ Vu ← Fe	4
{ Vu ← Fnm	wait	{ Vu ← Fe	4
{ Vu ← {	subsumed	{ Vu ← Fe	
{ Vu ← }	Syntax Error	empty, top-level	4, 10
{ Vu ← :	Syntax Error	empty, top-level	4, 10
{ Vu ← ::	Syntax Error	empty, top-level	4, 10
{ Vu ← ◇	Syntax Error	empty, top-level	4, 10
{ Vu ← ←	Syntax Error	empty, top-level	4, 10
{ Vu ← Break	Interrupt	empty, top-level	D3
{ Vu ← Nl	Syntax Error	empty, top-level	4, 10
{ Vu ← Vfo	wait	{ Vfo ← Vfo	4
{ Vu ← Vu	wait	{ Vu	

Table 31. Source Input Enumeration: Functions, { E : E

Sequence	Response	Equivalent	Trace
{ E : E E	subsumed	{ E : E	
{ E : E Fe	subsumed	{ E : E	
{ E : E Fnd	subsumed	{ E : E	
{ E : E Fnm	subsumed	{ E : E	
{ E : E {	subsumed	{ E : E	
{ E : E }	okay	Fe	4
{ E : E :	Syntax Error	empty, top-level	4, 10
{ E : E ::	Syntax Error	empty, top-level	4, 10
{ E : E ◇	wait	{	4
{ E : E ←	subsumed	{ E : E	
{ E : E Break	Interrupt	empty	D3
{ E : E Nl	wait	{	4
{ E : E Vfo	subsumed	{ E : E	
{ E : E Vu	subsumed	{ E : E	

Table 32. Source Input Enumeration: Functions, { Vfo ← Fe

Sequence	Response	Equivalent	Trace
{ Vfo ← Fe E	subsumed	{ Vfo ← E	
{ Vfo ← Fe Fe	subsumed	{ Vfo ← E	
{ Vfo ← Fe Fnd	subsumed	{ Vfo ← Fe	
{ Vfo ← Fe Fnm	subsumed	{ Vfo ← Fe	
{ Vfo ← Fe {	subsumed	{ Vfo ← Fe Fe	
{ Vfo ← Fe }	okay	Fe	4
{ Vfo ← Fe :	Syntax Error	empty, top-level	4, 10
{ Vfo ← Fe ::	Syntax Error	empty, top-level	4, 10
{ Vfo ← Fe ◇	wait	{	4
{ Vfo ← Fe ←	subsumed	{ Vfo ← E	
{ Vfo ← Fe Break	Interrupt	empty, top-level	D3
{ Vfo ← Fe Nl	wait	{	4
{ Vfo ← Fe Vfo	subsumed	{ Vfo ← E	
{ Vfo ← Fe Vu	subsumed	{ Vfo ← E	

Table 33. Source Input Enumeration: Functions, { Vfo ← Vfo

Sequence	Response	Equivalent	Trace
{ Vfo ← Vfo E	subsumed	{ Vfo ← E	
{ Vfo ← Vfo Fe	subsumed	{ Vfo ← E	
{ Vfo ← Vfo Fnd	subsumed	{ Vfo ← Fe	
{ Vfo ← Vfo Fnm	subsumed	{ Vfo ← Fe	
{ Vfo ← Vfo {	subsumed	{ Vfo ← Fe Fe	
{ Vfo ← Vfo }	okay	Fe	4
{ Vfo ← Vfo :	Syntax Error	empty, top-level	4, 10
{ Vfo ← Vfo ::	Syntax Error	empty, top-level	4, 10
{ Vfo ← Vfo ◇	wait	{	4
{ Vfo ← Vfo ←	wait	{ Vfo ←	
{ Vfo ← Vfo Break	Interrupt	empty, top-level	D3
{ Vfo ← Vfo Nl	wait	{	4
{ Vfo ← Vfo Vfo	subsumed	{ Vfo ← E	
{ Vfo ← Vfo Vu	subsumed	{ Vfo ← E	

Table 34. Source Input Enumeration: Functions, { Vfo ← Vu

Sequence	Response	Equivalent	Trace
{ Vfo ← Vu E	subsumed	{ Vfo ← E	
{ Vfo ← Vu Fe	subsumed	{ Vfo ← E	
{ Vfo ← Vu Fnd	subsumed	{ Vfo ← Fe	
{ Vfo ← Vu Fnm	subsumed	{ Vfo ← Fe	
{ Vfo ← Vu {	subsumed	{ Vfo ← Fe Fe	
{ Vfo ← Vu }	Value Error	empty, top-level	4, 10
{ Vfo ← Vu :	Value Error	empty, top-level	4, 10
{ Vfo ← Vu ::	Syntax Error	empty, top-level	4, 10
{ Vfo ← Vu ◇	Value Error	empty, top-level	4, 10
{ Vfo ← Vu ←	wait	{ Vfo ←	
{ Vfo ← Vu Break	Interrupt	empty, top-level	D3
{ Vfo ← Vu Nl	Value Error	empty, top-level	4, 10
{ Vfo ← Vu Vfo	subsumed	{ Vfo ← E	
{ Vfo ← Vu Vu	subsumed	{ Vfo ← E	

Table 35. Source Input Enumeration: Functions, { Vu ← Fe

Sequence	Response	Equivalent	Trace
{ Vu ← Fe E	subsumed	{ Vu ← E	
{ Vu ← Fe Fe	subsumed	{ Vu ← E	
{ Vu ← Fe Fnd	subsumed	{ Vu ← Fe	
{ Vu ← Fe Fnm	subsumed	{ Vu ← Fe	
{ Vu ← Fe {	subsumed	{ Vu ← Fe Fe	
{ Vu ← Fe }	okay	Fe	4
{ Vu ← Fe :	Syntax Error	empty, top-level	4, 10
{ Vu ← Fe ::	Syntax Error	empty, top-level	4, 10
{ Vu ← Fe ◇	wait	{	4
{ Vu ← Fe ←	subsumed	{ Vu ← E	
{ Vu ← Fe Break	Interrupt	empty, top-level	D3
{ Vu ← Fe Nl	wait	{	4
{ Vu ← Fe Vfo	subsumed	{ Vu ← E	
{ Vu ← Fe Vu	subsumed	{ Vu ← E	

Expression Enumeration

The expression stimulus captures a single line of Co-Dfns code, which is an expression. This is an expression which will give a value as a result, not a function or some other thing. It may be a named value, or it may be something that is unnamed. The expression enumeration may be one of the more complex enumerations, because there is so much that can happen. In particular, we need a way to capture and handle the following important semantics:

1. Vector Notation (Strand Syntax)
2. Vector Notation Assignment
3. Selective Assignment
4. Atomic Expressions

In order to handle all of these, we actually have a bit more stimuli than we have in the other sets, and we include an additional meta-response to handle things. In particular, we use the E stimuli within the expression itself in order to do a recursive reference for handling the nested vector notations. We do not want to deal with yet another recursive stimuli just for handling the vector notation, since it is mostly subsumed inside of the E stimuli anyways. However, a special case is when we have a vector notation (also called strand notation) that has only variables in it. In this case, we are dealing with something that could potentially be a value, if all of the variables are bound, or it could also be a valid assignment target. We use the Va and Vnu stimuli to encapsulate this behavior, so that we do not need to enumerate this recursion. Finally, to handle selective assignment, we allow for another meta-response *selective* which is the same thing as the *okay* response, but that indicates it is also a valid selective expression. These expressions that have the *selective* response are what is captured by the Es stimuli, which is the set of all selective assignment expressions. Anything else is subsumed by the E stimuli. The Es stimuli is only a legal stimuli when we are encountering a good situation for a selective assignment. In all other cases, it is just redundant. In order to be able to capture the selective assignment we have to additional stimuli that would usually be subsumed by the Fe stimuli, which are Sm and Sd. These are the valid dyadic and monadic selective functions, or a combination of them and one of the valid operators, such as each.

Finally, it is helpful to understand which expressions may be considered atomic, that is, whether or not they could be treated as a single object, rather than a complete expression. This includes things like variable references, variable indexing, strand notation, and so forth. We use the response *atomic* to indicate that a given sequence is to be considerd a valid atomic expression, which implies the okay response. The main place that this becomes important is in dealing with operators which take arrays as their right arguments. In these cases we may have an expression on the right, but the operator "slurps" the first atomic expression that it can find to use as the right argument to the operator, but no more.

Table 36. Source Input Enumeration: Expressions

Sequence	Response	Equivalent	Trace
E	illegal		
Es	illegal		
Fea	wait		4
Fed	Syntax Error	empty	4, 10
Fem	wait	Fea	4
[	Syntax Error	empty	4, 10
]	Syntax Error	empty	4, 10
(	wait		4
)	Syntax Error	empty	4, 10
;	Syntax Error	empty	4, 10
←	Syntax Error	empty	4, 10
Break	Interrupt	empty, top-level	D3
N	atomic		4
S	atomic	N	4
Sm	wait		4
Sd	Syntax Error	empty	4, 10
Va	atomic		4
Vna	atomic		4
Vi	Value Error	empty, top-level	4, 10
Vnu	wait		4

Table 37. Source Input Enumeration: Expressions, Fea

Sequence	Response	Equivalent	Trace
Fea E	illegal		
Fea Es	illegal		
Fea Fea	wait	Fea	4
Fea Fed	Syntax Error	empty	4, 10
Fea Fem	wait	Fea	4
Fea [	Syntax Error	empty	4, 10
Fea]	Syntax Error	empty	4, 10
Fea (	wait		4
Fea)	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fea ;	Syntax Error	empty	4, 10
Fea ←	Syntax Error	empty	4, 10
Fea Break	Interrupt	empty, top-level	D3
Fea N	okay		4
Fea S	okay	Fea N	4
Fea Sm	wait	Fea	4
Fea Sd	Syntax Error	empty	4, 10
Fea Va	okay		4
Fea Vna	okay		4
Fea Vi	Value Error	empty, top-level	4, 10
Fea Vnu	wait	Vnu	4

Table 38. Source Input Enumeration: Expressions, (

Sequence	Response	Equivalent	Trace
(E	wait		4
(Es	wait		4
(Fea	subsumed	(E	
(Fed	subsumed	(E	
(Fem	subsumed	(E	
([	subsumed	(E	
( ]	subsumed	(E	
((	subsumed	(E	
( )	Syntax Error	empty	4, 10
(;	subsumed	(E	
(←	subsumed	(E	
(Break	subsumed	(E	
(N	subsumed	(E	
(S	subsumed	(E	
(Sm	subsumed	(E	
(Sd	subsumed	(E	
(Va	subsumed	(E	
(Vna	subsumed	(E	
(Vi	subsumed	(E	

Sequence	Response	Equivalent	Trace
(Vnu	subsumed	(E	

Table 39. Source Input Enumeration: Expressions, N

Sequence	Response	Equivalent	Trace
N E	illegal		
N Es	illegal		
N Fea	wait	Fea	4
N Fed	wait	Fea	4
N Fem	Syntax Error	empty	4, 10
N [	wait		4
N]	Syntax Error	empty	4, 10
N (	wait		4
N)	Syntax Error	empty	4, 10
N ;	Syntax Error	empty	4, 10
N ←	Syntax Error	empty	4, 10
N Break	Interrupt	empty, top-level	D3
N N	atomic	N	4
N S	atomic	N	4
N Sm	wait	N Fea	4
N Sd	wait	Sm	4
N Va	atomic	N	4
N Vna	atomic	N	4
N Vi	Value Error	empty, top-level	4, 10
N Vnu	wait		4

Table 40. Source Input Enumeration: Expressions, Sm

Sequence	Response	Equivalent	Trace
Sm E	illegal		
Sm Es	illegal		
Sm Fea	wait	Fea	4
Sm Fed	Syntax Error	empty	4, 10
Sm Fem	wait	Fea	4
Sm [	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Sm]	Syntax Error	empty	4, 10
Sm (	wait		4
Sm)	Syntax Error	empty	4, 10
Sm ;	Syntax Error	empty	4, 10
Sm ←	Syntax Error	empty	4, 10
Sm Break	Interrupt	empty, top-level	D3
Sm N	okay		4
Sm S	okay	Sm N	4
Sm Sm	wait	Sm	4
Sm Sd	Syntax Error	empty	4, 10
Sm Va	selective		4
Sm Vna	okay		4
Sm Vi	Value Error	empty, top-level	4, 10
Sm Vnu	wait	Vnu	4

Table 41. Source Input Enumeration: Expressions, Va

Sequence	Response	Equivalent	Trace
Va E	illegal		
Va Es	illegal		
Va Fea	wait	Fea	4
Va Fed	wait	Fea	4
Va Fem	Syntax Error	empty	4, 10
Va [	wait		4
Va]	Syntax Error	empty	4, 10
Va (	wait	N (	4
Va)	Syntax Error	empty	4, 10
Va ;	Syntax Error	empty	4, 10
Va ←	wait	Fea	4
Va Break	Interrupt	empty, top-level	D3
Va N	atomic	N	4
Va S	atomic	N	4
Va Sm	wait	Fea	4
Va Sd	wait	N Sd	4

Sequence	Response	Equivalent	Trace
Va Va	illegal		
Va Vna	illegal		
Va Vi	Value Error	empty, top-level	4, 10
Va Vnu	illegal		

Table 42. Source Input Enumeration: Expressions, Vna

Sequence	Response	Equivalent	Trace
Vna E	illegal		
Vna Es	illegal		
Vna Fea	wait	Fea	4
Vna Fed	wait	Fea	4
Vna Fem	Syntax Error	empty	4, 10
Vna [	wait	N [	4
Vna]	Syntax Error	empty	4, 10
Vna (	wait	Va (	4
Vna)	Syntax Error	empty	4, 10
Vna ;	Syntax Error	empty	4, 10
Vna ←	wait	Fea	4
Vna Break	Interrupt	empty, top-level	D3
Vna N	atomic	N	4
Vna S	atomic	N	4
Vna Sm	wait	Fea	4
Vna Sd	wait	N Sd	4
Vna Va	illegal		
Vna Vna	illegal		
Vna Vi	Value Error	empty, top-level	4, 10
Vna Vnu	illegal		

Table 43. Source Input Enumeration: Expressions, Vnu

Sequence	Response	Equivalent	Trace
Vnu E	illegal		
Vnu Es	illegal		
Vnu Fea	Value Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Vnu Fed	Value Error	empty	4, 10
Vnu Fem	Value Error	empty	4, 10
Vnu [	Value Error	empty	4, 10
Vnu]	Syntax Error	empty	4, 10
Vnu (	Value Error	empty	4, 10
Vnu)	Syntax Error	empty	4, 10
Vnu ;	Syntax Error	empty	4, 10
Vnu ←	wait	Fea	4
Vnu Break	Interrupt	empty, top-level	D3
Vnu N	Value Error	empty	4, 10
Vnu S	Value Error	empty	4, 10
Vnu Sm	Value Error	empty	4, 10
Vnu Sd	Value Error	empty	4, 10
Vnu Va	illegal		
Vnu Vna	illegal		
Vnu Vi	Value Error	empty, top-level	4, 10
Vnu Vnu	illegal		

Table 44. Source Input Enumeration: Expressions, Fea (

Sequence	Response	Equivalent	Trace
Fea (E	wait		4
Fea (Es	wait		4
Fea (Fea	subsumed	Fea (E	
Fea (Fed	subsumed	Fea (E	
Fea (Fem	subsumed	Fea (E	
Fea ([	subsumed	Fea (E	
Fea ( ]	subsumed	Fea (E	
Fea ((	subsumed	Fea (E	
Fea ( )	Syntax Error	empty	4, 10
Fea (;	subsumed	Fea (E	
Fea (←	subsumed	Fea (E	
Fea (Break	subsumed	Fea (E	
Fea (N	subsumed	Fea (E	

Sequence	Response	Equivalent	Trace
Fea (S	subsumed	Fea (E	
Fea (Sm	subsumed	Fea (E	
Fea (Sd	subsumed	Fea (E	
Fea (Va	subsumed	Fea (E	
Fea (Vna	subsumed	Fea (E	
Fea (Vi	subsumed	Fea (E	
Fea (Vnu	subsumed	Fea (E	

Table 45. Source Input Enumeration: Expressions, Fea N

Sequence	Response	Equivalent	Trace
Fea N E	illegal		
Fea N Es	illegal		
Fea N Fea	wait	Fea	4
Fea N Fed	wait	Fea	4
Fea N Fem	Syntax Error	empty	4, 10
Fea N [	wait	N [	4
Fea N]	Syntax Error	empty	4, 10
Fea N (	wait		4
Fea N)	Syntax Error	empty	4, 10
Fea N ;	Syntax Error	empty	4, 10
Fea N ←	Syntax Error	empty	4, 10
Fea N Break	Interrupt	empty, top-level	D3
Fea N N	okay	Fea N	4
Fea N S	okay	Fea N	4
Fea N Sm	wait	N Fea	4
Fea N Sd	wait	N Fea	4
Fea N Va	okay	Fea N	4
Fea N Vna	okay	Fea N	4
Fea N Vi	Value Error	empty, top-level	4, 10
Fea N Vnu	wait	N Vnu	4

Table 46. Source Input Enumeration: Expressions, Fea Va

Sequence	Response	Equivalent	Trace
Fea Va E	illegal		
Fea Va Es	illegal		
Fea Va Fea	wait	Fea	4
Fea Va Fed	wait	Fea	4
Fea Va Fem	Syntax Error	empty	4, 10
Fea Va [	wait		4
Fea Va]	Syntax Error	empty	4, 10
Fea Va (	wait	Fea N (	4
Fea Va)	Syntax Error	empty	4, 10
Fea Va ;	Syntax Error	empty	4, 10
Fea Va ←	wait	Fea	4
Fea Va Break	Interrupt	empty, top-level	D3
Fea Va N	okay	Fea N	4
Fea Va S	okay	Fea S	4
Fea Va Sm	wait	Fea	4
Fea Va Sd	wait	Fea	4
Fea Va Va	illegal		
Fea Va Vna	illegal		
Fea Va Vi	Value Error	empty, top-level	4, 10
Fea Va Vnu	illegal		

Table 47. Source Input Enumeration: Expressions, Fea Vna

Sequence	Response	Equivalent	Trace
Fea Vna E	illegal		
Fea Vna Es	illegal		
Fea Vna Fea	wait	Fea	4
Fea Vna Fed	wait	Fea	4
Fea Vna Fem	Syntax Error	empty	4, 10
Fea Vna [	wait	Fea N [	4
Fea Vna]	Syntax Error	empty	4, 10
Fea Vna (	wait	Fea Va (	4
Fea Vna)	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fea Vna ;	Syntax Error	empty	4, 10
Fea Vna ←	wait	Fea	4
Fea Vna Break	Interrupt	empty, top-level	D3
Fea Vna N	okay	Fea N	4
Fea Vna S	okay	Fea S	4
Fea Vna Sm	wait	Fea	4
Fea Vna Sd	wait	Fea	4
Fea Vna Va	illegal		
Fea Vna Vna	illegal		
Fea Vna Vi	Value Error	empty, top-level	4, 10
Fea Vna Vnu	illegal		

Table 48. Source Input Enumeration: Expressions, (E

Sequence	Response	Equivalent	Trace
(E E	subsumed	(E	
(E Es	subsumed	(E	
(E Fea	subsumed	(E	
(E Fed	subsumed	(E	
(E Fem	subsumed	(E	
(E [	subsumed	(E	
(E]	subsumed	(E	
(E (	subsumed	(E	
(E)	atomic	N	4
(E ;	subsumed	(E	
(E ←	subsumed	(E	
(E Break	subsumed	(E	
(E N	subsumed	(E	
(E S	subsumed	(E	
(E Sm	subsumed	(E	
(E Sd	subsumed	(E	
(E Va	subsumed	(E	
(E Vna	subsumed	(E	
(E Vi	subsumed	(E	

Sequence	Response	Equivalent	Trace
(E Vnu	subsumed	(E	

Table 49. Source Input Enumeration: Expressions, (Es

Sequence	Response	Equivalent	Trace
(Es E	subsumed	(Es	
(Es Es	subsumed	(Es	
(Es Fea	subsumed	(Es	
(Es Fed	subsumed	(Es	
(Es Fem	subsumed	(Es	
(Es [	subsumed	(Es	
(Es]	subsumed	(Es	
(Es (	subsumed	(Es	
(Es)	selective, atomic	Va	4
(Es ;	subsumed	(Es	
(Es ←	subsumed	(Es	
(Es Break	subsumed	(Es	
(Es N	subsumed	(Es	
(Es S	subsumed	(Es	
(Es Sm	subsumed	(Es	
(Es Sd	subsumed	(Es	
(Es Va	subsumed	(Es	
(Es Vna	subsumed	(Es	
(Es Vi	subsumed	(Es	
(Es Vnu	subsumed	(Es	

Table 50. Source Input Enumeration: Expressions, N [

Sequence	Response	Equivalent	Trace
N [E	wait		4
N [Es	subsumed	N [E	
N [Fea	subsumed	N [E	
N [Fed	subsumed	N [E	
N [Fem	subsumed	N [E	
N [[	subsumed	N [E	

Sequence	Response	Equivalent	Trace
N [ ]	okay	Fea N	4
N [(	subsumed	N [E	
N [ )	subsumed	N [E	
N [;	wait	N [	4
N [←	subsumed	N [E	
N [Break	subsumed	N [E	
N [N	subsumed	N [E	
N [S	subsumed	N [E	
N [Sm	subsumed	N [E	
N [Sd	subsumed	N [E	
N [Va	subsumed	N [E	
N [Vna	subsumed	N [E	
N [Vi	subsumed	N [E	
N [Vnu	subsumed	N [E	

Table 51. Source Input Enumeration: Expressions, N (

Sequence	Response	Equivalent	Trace
N (E	wait	(E	4
N (Es	subsumed	N (E	
N (Fea	subsumed	N (E	
N (Fed	subsumed	N (E	
N (Fem	subsumed	N (E	
N ([	subsumed	N (E	
N ( ]	subsumed	N (E	
N ((	subsumed	N (E	
N ( )	Syntax Error	empty	4, 10
N (;	subsumed	N (E	
N (←	subsumed	N (E	
N (Break	subsumed	N (E	
N (N	subsumed	N (E	
N (S	subsumed	N (E	
N (Sm	subsumed	N (E	
N (Sd	subsumed	N (E	

Sequence	Response	Equivalent	Trace
N (Va	subsumed	N (E	
N (Vna	subsumed	N (E	
N (Vi	subsumed	N (E	
N (Vnu	subsumed	N (E	

Table 52. Source Input Enumeration: Expressions, N Vnu

Sequence	Response	Equivalent	Trace
N Vnu E	illegal		
N Vnu Es	illegal		
N Vnu Fea	Value Error	empty, top-level	4, 10
N Vnu Fed	Value Error	empty, top-level	4, 10
N Vnu Fem	Value Error	empty, top-level	4, 10
N Vnu [	Value Error	empty, top-level	4, 10
N Vnu]	Syntax Error	empty	4, 10
N Vnu (	Value Error	empty, top-level	4, 10
N Vnu)	Syntax Error	empty	4, 10
N Vnu ;	Syntax Error	empty	4, 10
N Vnu ←	Syntax Error	empty	4, 10
N Vnu Break	Interrupt	empty, top-level	D3
N Vnu N	Value Error	empty, top-level	4, 10
N Vnu S	Value Error	empty, top-level	4, 10
N Vnu Sm	Value Error	empty, top-level	4, 10
N Vnu Sd	Value Error	empty, top-level	4, 10
N Vnu Va	illegal		
N Vnu Vna	illegal		
N Vnu Vi	Value Error	empty, top-level	4, 10
N Vnu Vnu	illegal		

Table 53. Source Input Enumeration: Expressions, Sm (

Sequence	Response	Equivalent	Trace
Sm (E	wait		4
Sm (Es	wait		4
Sm (Fea	subsumed	Sm (E	

Sequence	Response	Equivalent	Trace
Sm (Fed	subsumed	Sm (E	
Sm (Fem	subsumed	Sm (E	
Sm ([	subsumed	Sm (E	
Sm ( ]	subsumed	Sm (E	
Sm ((	subsumed	Sm (E	
Sm ( )	Syntax Error	empty	4, 10
Sm (;	subsumed	Sm (E	
Sm (←	subsumed	Sm (E	
Sm (Break	Interrupt	empty, top-level	D3
Sm (N	subsumed	Sm (E	
Sm (S	subsumed	Sm (E	
Sm (Sm	subsumed	Sm (E	
Sm (Sd	subsumed	Sm (E	
Sm (Va	subsumed	Sm (E	
Sm (Vna	subsumed	Sm (E	
Sm (Vi	subsumed	Sm (E	
Sm (Vnu	subsumed	Sm (E	

Table 54. Source Input Enumeration: Expressions, Sm N

Sequence	Response	Equivalent	Trace
Sm N E	illegal		
Sm N Es	illegal		
Sm N Fea	wait	Fea	4
Sm N Fed	wait	Fea	4
Sm N Fem	Syntax Error	empty	4, 10
Sm N [	wait	N [	4
Sm N]	Syntax Error	empty	4, 10
Sm N (	wait		4
Sm N)	Syntax Error	empty	4, 10
Sm N ;	Syntax Error	empty	4, 10
Sm N ←	Syntax Error	empty	4, 10
Sm N Break	Interrupt	empty, top-level	D3
Sm N N	okay	Sm N	4

Sequence	Response	Equivalent	Trace
Sm N S	okay	Sm S	4
Sm N Sm	wait	Fea	4
Sm N Sd	wait	N Sd	4
Sm N Va	okay	Sm N	4
Sm N Vna	okay	Sm N	4
Sm N Vi	Value Error	empty, top-level	4, 10
Sm N Vnu	wait	N Vnu	4, 10

Table 55. Source Input Enumeration: Expressions, Sm Va

Sequence	Response	Equivalent	Trace
Sm Va E	illegal		
Sm Va Es	illegal		
Sm Va Fea	wait	Fea	4
Sm Va Fed	wait	Fea	4
Sm Va Fem	Syntax Error	empty	4, 10
Sm Va [	wait		4
Sm Va]	Syntax Error	empty	4, 10
Sm Va (	wait	Sm N (	4
Sm Va)	Syntax Error	empty	4, 10
Sm Va ;	Syntax Error	empty	4, 10
Sm Va ←	wait	Fea	4
Sm Va Break	Interrupt	empty, top-level	D3
Sm Va N	okay	Sm N	4
Sm Va S	okay	Sm S	4
Sm Va Sm	wait	Fea	4
Sm Va Sd	wait	N Sd	4
Sm Va Va	illegal		
Sm Va Vna	illegal		
Sm Va Vi	Value Error	empty, top-level	4, 10
Sm Va Vnu	illegal		

Table 56. Source Input Enumeration: Expressions, Sm Vna

Sequence	Response	Equivalent	Trace
Sm Vna E	illegal		
Sm Vna Es	illegal		
Sm Vna Fea	wait	Fea	4
Sm Vna Fed	wait	Fea	4
Sm Vna Fem	Syntax Error	empty	4, 10
Sm Vna [	wait	Sm N [	4
Sm Vna]	Syntax Error	empty	4, 10
Sm Vna (	wait	Sm Va (	4
Sm Vna)	Syntax Error	empty	4, 10
Sm Vna ;	Syntax Error	empty	4, 10
Sm Vna ←	wait	Fea	4
Sm Vna Break	Interrupt	empty, top-level	D3
Sm Vna N	okay	Sm N	4
Sm Vna S	okay	Sm S	4
Sm Vna Sm	wait	Fea	4
Sm Vna Sd	wait	N Sd	4
Sm Vna Va	illegal		
Sm Vna Vna	illegal		
Sm Vna Vi	Value Error	empty, top-level	4, 10
Sm Vna Vnu	illegal		

Table 57. Source Input Enumeration: Expressions, Va [

Sequence	Response	Equivalent	Trace
Va [E	wait		4
Va [Es	subsumed	Va [E	
Va [Fea	subsumed	Va [E	
Va [Fed	subsumed	Va [E	
Va [Fem	subsumed	Va [E	
Va [[	subsumed	Va [E	
Va [ ]	okay		4
Va [(	subsumed	Va [E	
Va [ )	subsumed	Va [E	

Sequence	Response	Equivalent	Trace
Va [;	wait	Va [	4
Va [←	subsumed	Va [E	
Va [Break	subsumed	Va [E	
Va [N	subsumed	Va [E	
Va [S	subsumed	Va [E	
Va [Sm	subsumed	Va [E	
Va [Sd	subsumed	Va [E	
Va [Va	subsumed	Va [E	
Va [Vna	subsumed	Va [E	
Va [Vi	subsumed	Va [E	
Va [Vnu	subsumed	Va [E	

Table 58. Source Input Enumeration: Expressions, Fea (E

Sequence	Response	Equivalent	Trace
Fea (E E	subsumed	Fea (E	
Fea (E Es	subsumed	Fea (E	
Fea (E Fea	subsumed	Fea (E	
Fea (E Fed	subsumed	Fea (E	
Fea (E Fem	subsumed	Fea (E	
Fea (E [	subsumed	Fea (E	
Fea (E]	subsumed	Fea (E	
Fea (E (	subsumed	Fea (E	
Fea (E)	okay	Fea N	4
Fea (E ;	subsumed	Fea (E	
Fea (E ←	subsumed	Fea (E	
Fea (E Break	subsumed	Fea (E	
Fea (E N	subsumed	Fea (E	
Fea (E S	subsumed	Fea (E	
Fea (E Sm	subsumed	Fea (E	
Fea (E Sd	subsumed	Fea (E	
Fea (E Va	subsumed	Fea (E	
Fea (E Vna	subsumed	Fea (E	
Fea (E Vi	subsumed	Fea (E	

Sequence	Response	Equivalent	Trace
Fea (E Vnu	subsumed	Fea (E	

Table 59. Source Input Enumeration: Expressions, Fea (Es

Sequence	Response	Equivalent	Trace
Fea (Es E	subsumed	Fea (Es	
Fea (Es Es	subsumed	Fea (Es	
Fea (Es Fea	subsumed	Fea (Es	
Fea (Es Fed	subsumed	Fea (Es	
Fea (Es Fem	subsumed	Fea (Es	
Fea (Es [	subsumed	Fea (Es	
Fea (Es]	subsumed	Fea (Es	
Fea (Es (	subsumed	Fea (Es	
Fea (Es)	okay	Fea Va	4
Fea (Es ;	subsumed	Fea (Es	
Fea (Es ←	subsumed	Fea (Es	
Fea (Es Break	subsumed	Fea (Es	
Fea (Es N	subsumed	Fea (Es	
Fea (Es S	subsumed	Fea (Es	
Fea (Es Sm	subsumed	Fea (Es	
Fea (Es Sd	subsumed	Fea (Es	
Fea (Es Va	subsumed	Fea (Es	
Fea (Es Vna	subsumed	Fea (Es	
Fea (Es Vi	subsumed	Fea (Es	
Fea (Es Vnu	subsumed	Fea (Es	

Table 60. Source Input Enumeration: Expressions, Fea N (

Sequence	Response	Equivalent	Trace
Fea N (E	wait	Fea (E	4
Fea N (Es	subsumed	Fea N (E	
Fea N (Fea	subsumed	Fea N (E	
Fea N (Fed	subsumed	Fea N (E	
Fea N (Fem	subsumed	Fea N (E	
Fea N ([	subsumed	Fea N (E	

Sequence	Response	Equivalent	Trace
Fea N ( ]	subsumed	Fea N (E	
Fea N ((	subsumed	Fea N (E	
Fea N ( )	Syntax Error	empty	4, 10
Fea N (;	subsumed	Fea N (E	
Fea N (←	subsumed	Fea N (E	
Fea N (Break	subsumed	Fea N (E	
Fea N (N	subsumed	Fea N (E	
Fea N (S	subsumed	Fea N (E	
Fea N (Sm	subsumed	Fea N (E	
Fea N (Sd	subsumed	Fea N (E	
Fea N (Va	subsumed	Fea N (E	
Fea N (Vna	subsumed	Fea N (E	
Fea N (Vi	subsumed	Fea N (E	
Fea N (Vnu	subsumed	Fea N (E	

Fea

Table 61. Source Input Enumeration: Expressions, Fea Va [

Sequence	Response	Equivalent	Trace
Fea Va [E	wait		4
Fea Va [Es	subsumed	Fea Va [E	
Fea Va [Fea	subsumed	Fea Va [E	
Fea Va [Fed	subsumed	Fea Va [E	
Fea Va [Fem	subsumed	Fea Va [E	
Fea Va [[	subsumed	Fea Va [E	
Fea Va [ ]	okay		4
Fea Va [(	subsumed	Fea Va [E	
Fea Va [ )	subsumed	Fea Va [E	
Fea Va [;	wait	Fea Va [	4
Fea Va [←	subsumed	Fea Va [E	
Fea Va [Break	subsumed	Fea Va [E	
Fea Va [N	subsumed	Fea Va [E	
Fea Va [S	subsumed	Fea Va [E	
Fea Va [Sm	subsumed	Fea Va [E	

Sequence	Response	Equivalent	Trace
Fea Va [Sd	subsumed	Fea Va [E	
Fea Va [Va	subsumed	Fea Va [E	
Fea Va [Vna	subsumed	Fea Va [E	
Fea Va [Vi	subsumed	Fea Va [E	
Fea Va [Vnu	subsumed	Fea Va [E	

Table 62. Source Input Enumeration: Expressions, N [E

Sequence	Response	Equivalent	Trace
N [E E	subsumed	N [E	
N [E Es	subsumed	N [E	
N [E Fea	subsumed	N [E	
N [E Fed	subsumed	N [E	
N [E Fem	subsumed	N [E	
N [E [	subsumed	N [E	
N [E]	okay	Fea N	4
N [E (	subsumed	N [E	
N [E)	subsumed	N [E	
N [E ;	wait	N [	4
N [E ←	subsumed	N [E	
N [E Break	subsumed	N [E	
N [E N	subsumed	N [E	
N [E S	subsumed	N [E	
N [E Sm	subsumed	N [E	
N [E Sd	subsumed	N [E	
N [E Va	subsumed	N [E	
N [E Vna	subsumed	N [E	
N [E Vi	subsumed	N [E	
N [E Vnu	subsumed	N [E	

Table 63. Source Input Enumeration: Expressions, Sm (E

Sequence	Response	Equivalent	Trace
Sm (E E	illegal		
Sm (E Es	illegal		

Sequence	Response	Equivalent	Trace
Sm (E Fea	subsumed	Sm (E	
Sm (E Fed	subsumed	Sm (E	
Sm (E Fem	subsumed	Sm (E	
Sm (E [	subsumed	Sm (E	
Sm (E]	subsumed	Sm (E	
Sm (E (	subsumed	Sm (E	
Sm (E)	okay	Sm N	4, 10
Sm (E ;	subsumed	Sm (E	
Sm (E ←	subsumed	Sm (E	
Sm (E Break	Interrupt	empty, top-level	D3
Sm (E N	subsumed	Sm (E	
Sm (E S	subsumed	Sm (E	
Sm (E Sm	subsumed	Sm (E	
Sm (E Sd	subsumed	Sm (E	
Sm (E Va	subsumed	Sm (E	
Sm (E Vna	subsumed	Sm (E	
Sm (E Vi	subsumed	Sm (E	
Sm (E Vnu	subsumed	Sm (E	

Table 64. Source Input Enumeration: Expressions, Sm (Es

Sequence	Response	Equivalent	Trace
Sm (Es E	illegal		
Sm (Es Es	illegal		
Sm (Es Fea	subsumed	Sm (E	
Sm (Es Fed	subsumed	Sm (E	
Sm (Es Fem	subsumed	Sm (E	
Sm (Es [	subsumed	Sm (E	
Sm (Es]	subsumed	Sm (E	
Sm (Es (	subsumed	Sm (E	
Sm (Es)	selective	Sm Va	4, 10
Sm (Es ;	subsumed	Sm (E	
Sm (Es ←	subsumed	Sm (E	
Sm (Es Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Sm (Es N	subsumed	Sm (E	
Sm (Es S	subsumed	Sm (E	
Sm (Es Sm	subsumed	Sm (E	
Sm (Es Sd	subsumed	Sm (E	
Sm (Es Va	subsumed	Sm (E	
Sm (Es Vna	subsumed	Sm (E	
Sm (Es Vi	subsumed	Sm (E	
Sm (Es Vnu	subsumed	Sm (E	

Table 65. Source Input Enumeration: Expressions, Sm N (

Sequence	Response	Equivalent	Trace
Sm N (E	wait	Sm (E	4
Sm N (Es	illegal		
Sm N (Fea	subsumed	Sm N (E	
Sm N (Fed	subsumed	Sm N (E	
Sm N (Fem	subsumed	Sm N (E	
Sm N ([	subsumed	Sm N (E	
Sm N ( ]	subsumed	Sm N (E	
Sm N ((	subsumed	Sm N (E	
Sm N ( )	Syntax Error	empty	4, 10
Sm N (;	subsumed	Sm N (E	
Sm N (←	subsumed	Sm N (E	
Sm N (Break	Interrupt	empty, top-level	D3
Sm N (N	subsumed	Sm N (E	
Sm N (S	subsumed	Sm N (E	
Sm N (Sm	subsumed	Sm N (E	
Sm N (Sd	subsumed	Sm N (E	
Sm N (Va	subsumed	Sm N (E	
Sm N (Vna	subsumed	Sm N (E	
Sm N (Vi	subsumed	Sm N (E	
Sm N (Vnu	subsumed	Sm N (E	

Table 66. Source Input Enumeration: Expressions, Sm Va [

Sequence	Response	Equivalent	Trace
Sm Va [E	wait		4
Sm Va [Es	subsumed	Sm Va [E	
Sm Va [Fea	subsumed	Sm Va [E	
Sm Va [Fed	subsumed	Sm Va [E	
Sm Va [Fem	subsumed	Sm Va [E	
Sm Va [[	subsumed	Sm Va [E	
Sm Va [ ]	selective	Va [ ]	4
Sm Va [(	subsumed	Sm Va [E	
Sm Va [ )	subsumed	Sm Va [E	
Sm Va [;	wait	Sm Va [	4
Sm Va [←	subsumed	Sm Va [E	
Sm Va [Break	subsumed	Sm Va [E	
Sm Va [N	subsumed	Sm Va [E	
Sm Va [S	subsumed	Sm Va [E	
Sm Va [Sm	subsumed	Sm Va [E	
Sm Va [Sd	subsumed	Sm Va [E	
Sm Va [Va	subsumed	Sm Va [E	
Sm Va [Vna	subsumed	Sm Va [E	
Sm Va [Vi	subsumed	Sm Va [E	
Sm Va [Vnu	subsumed	Sm Va [E	

Table 67. Source Input Enumeration: Expressions, Va [E

Sequence	Response	Equivalent	Trace
Va [E E	subsumed	Va [E	
Va [E Es	subsumed	Va [E	
Va [E Fea	subsumed	Va [E	
Va [E Fed	subsumed	Va [E	
Va [E Fem	subsumed	Va [E	
Va [E [	subsumed	Va [E	
Va [E]	okay	Va [ ]	4
Va [E (	subsumed	Va [E	
Va [E)	subsumed	Va [E	

Sequence	Response	Equivalent	Trace
Va [E ;	wait	Va [	4
Va [E ←	subsumed	Va [E	
Va [E Break	subsumed	Va [E	
Va [E N	subsumed	Va [E	
Va [E S	subsumed	Va [E	
Va [E Sm	subsumed	Va [E	
Va [E Sd	subsumed	Va [E	
Va [E Va	subsumed	Va [E	
Va [E Vna	subsumed	Va [E	
Va [E Vi	subsumed	Va [E	
Va [E Vnu	subsumed	Va [E	

Table 68. Source Input Enumeration: Expressions, Va [ ]

Sequence	Response	Equivalent	Trace
Va [ ] E	illegal		
Va [ ] Es	illegal		
Va [ ] Fea	wait	Va Fea	4
Va [ ] Fed	wait	Va Fed	4
Va [ ] Fem	Syntax Error	empty	4, 10
Va [ ] [	wait	Va [	4
Va [ ]]	Syntax Error	empty, top-level	4, 10
Va [ ] (	wait	Va (	4
Va [ ])	Syntax Error	empty	4, 10
Va [ ] ;	Syntax Error	empty	4, 10
Va [ ] ←	wait	Fea	4
Va [ ] Break	Interrupt	empty, top-level	D3
Va [ ] N	okay	N	4
Va [ ] S	okay	S	4
Va [ ] Sm	wait	Va [ ] Fea	4
Va [ ] Sd	wait	N Sd	4
Va [ ] Va	okay	Vna	4
Va [ ] Vna	okay	Vna	4
Va [ ] Vi	Value Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Va [ ] Vnu	wait	Vnu	4

Table 69. Source Input Enumeration: Expressions, Fea N [E

Sequence	Response	Equivalent	Trace
Fea N [E E	subsumed	Fea N [E	
Fea N [E Es	subsumed	Fea N [E	
Fea N [E Fea	subsumed	Fea N [E	
Fea N [E Fed	subsumed	Fea N [E	
Fea N [E Fem	subsumed	Fea N [E	
Fea N [E [	subsumed	Fea N [E	
Fea N [E]	okay	Fea N	4
Fea N [E (	subsumed	Fea N [E	
Fea N [E)	subsumed	Fea N [E	
Fea N [E ;	wait	Fea N [	4
Fea N [E ←	subsumed	Fea N [E	
Fea N [E Break	subsumed	Fea N [E	
Fea N [E N	subsumed	Fea N [E	
Fea N [E S	subsumed	Fea N [E	
Fea N [E Sm	subsumed	Fea N [E	
Fea N [E Sd	subsumed	Fea N [E	
Fea N [E Va	subsumed	Fea N [E	
Fea N [E Vna	subsumed	Fea N [E	
Fea N [E Vi	subsumed	Fea N [E	
Fea N [E Vnu	subsumed	Fea N [E	

Table 70. Source Input Enumeration: Expressions, Fea Va [E

Sequence	Response	Equivalent	Trace
Fea Va [E E	subsumed	Fea Va [E	
Fea Va [E Es	subsumed	Fea Va [E	
Fea Va [E Fea	subsumed	Fea Va [E	
Fea Va [E Fed	subsumed	Fea Va [E	
Fea Va [E Fem	subsumed	Fea Va [E	
Fea Va [E [	subsumed	Fea Va [E	

Sequence	Response	Equivalent	Trace
Fea Va [E]	okay	Fea Va [ ]	4
Fea Va [E (	subsumed	Fea Va [E	
Fea Va [E)	subsumed	Fea Va [E	
Fea Va [E ;	wait	Fea Va [	4
Fea Va [E ←	subsumed	Fea Va [E	
Fea Va [E Break	subsumed	Fea Va [E	
Fea Va [E N	subsumed	Fea Va [E	
Fea Va [E S	subsumed	Fea Va [E	
Fea Va [E Sm	subsumed	Fea Va [E	
Fea Va [E Sd	subsumed	Fea Va [E	
Fea Va [E Va	subsumed	Fea Va [E	
Fea Va [E Vna	subsumed	Fea Va [E	
Fea Va [E Vi	subsumed	Fea Va [E	
Fea Va [E Vnu	subsumed	Fea Va [E	

Table 71. Source Input Enumeration: Expressions, Fea Va [ ]

Sequence	Response	Equivalent	Trace
Fea Va [ ] E	illegal		
Fea Va [ ] Es	illegal		
Fea Va [ ] Fea	wait	Fea Va Fea	4
Fea Va [ ] Fed	wait	Fea Va Fed	4
Fea Va [ ] Fem	Syntax Error	empty	4, 10
Fea Va [ ] [	wait	Fea Va [	4
Fea Va [ ]]	Syntax Error	empty, top-level	4, 10
Fea Va [ ] (	wait	Fea Va (	4
Fea Va [ ])	Syntax Error	empty	4, 10
Fea Va [ ] ;	Syntax Error	empty	4, 10
Fea Va [ ] ←	wait	Fea	4
Fea Va [ ] Break	Interrupt	empty, top-level	D3
Fea Va [ ] N	okay	Fea N	4
Fea Va [ ] S	okay	Fea S	4
Fea Va [ ] Sm	wait	Fea Va [ ] Fea	4
Fea Va [ ] Sd	wait	Fea N Sd	4

Sequence	Response	Equivalent	Trace
Fea Va [ ] Va	okay	Fea Vna	4
Fea Va [ ] Vna	okay	Fea Vna	4
Fea Va [ ] Vi	Value Error	empty	4, 10
Fea Va [ ] Vnu	wait	Fea Vnu	4

Table 72. Source Input Enumeration: Expressions, Sm Va [E

Sequence	Response	Equivalent	Trace
Sm Va [E E	subsumed	Sm Va [E	
Sm Va [E Es	subsumed	Sm Va [E	
Sm Va [E Fea	subsumed	Sm Va [E	
Sm Va [E Fed	subsumed	Sm Va [E	
Sm Va [E Fem	subsumed	Sm Va [E	
Sm Va [E [	subsumed	Sm Va [E	
Sm Va [E]	selective	Va [ ]	4
Sm Va [E (	subsumed	Sm Va [E	
Sm Va [E)	subsumed	Sm Va [E	
Sm Va [E ;	wait	Sm Va [	4
Sm Va [E ←	subsumed	Sm Va [E	
Sm Va [E Break	subsumed	Sm Va [E	
Sm Va [E N	subsumed	Sm Va [E	
Sm Va [E S	subsumed	Sm Va [E	
Sm Va [E Sm	subsumed	Sm Va [E	
Sm Va [E Sd	subsumed	Sm Va [E	
Sm Va [E Va	subsumed	Sm Va [E	
Sm Va [E Vna	subsumed	Sm Va [E	
Sm Va [E Vi	subsumed	Sm Va [E	
Sm Va [E Vnu	subsumed	Sm Va [E	

Function Expressions Enumeration

Function expression stimuli capture the correct behavior when dealing with expressions that are meant to describe some sort of function. The result of evaluating any of these expressions is an unamed function value. Notice that unlike the Expression enumeration, we do not allow for naming here. The reason is simple, while we can have a function value with a name, if we then try to use it atomically, the name may

no longer refer to the function value, but will instead refer to the expression value, perhaps. This leads to ambiguity in our enumeration. Instead, we expect that the result of a function expression should be something atomic, something that we can treat as a single unit for syntactic purposes. This does allow for us to embed a named function value inside of parentheses, for instance, but it does not allow us to just take on a name assignment to the left side of a function expression. This has to be handled explicitly in the other enumerations, rather than here.

We use three different responses special to this enumeration to indicate whether the given function expression is dyadic or ambivalent or monadic. These are *dyadic*, *ambivalent*, and *monadic* respectively. These are the same as the *okay* response, but they indicate additionally the arity of the functions. Finally, there is the *oper[op]* responses which are described in more detail below, which are used to map to the Feo stimuli. We allow the *axis* to augment any of these other responses in the case when the expression described accepts an axis specification. Axis specifications may only appear in conjunction with one of the function responses, and not with, for instance, the *oper* response.

There are five recursive stimuli that are enumerated here by these tables: Fe, Fea, Fed, Fem, and Feo. That's a lot, but this is partly because of the interesting complexity involved in function handling. Each of these responses is designed for specific purposes and for specific contexts, and one should not feel that these can be used interchangeably.

The Fe stimuli is the all encompassing stimuli. It's purpose is to capture any single "function" unit. It really has only one specific reason for existance, binding. Function values can be bound, or given names. This can occur in either the top-level context, which also accepts any function value on a line by itself, or inside of a function definition. In these cases, we expect the Expression stimuli to subsume all other uses of function values, and so we need not have any precision in the detail of the kind of function being bound. Put another way, the Fe stimuli is there only to serve as a catch-all for when we want to give some function value a name. In all other cases, one of the more specific stimuli should be used.

The Fea, Fem, and Fed stimuli map to the normal function values, and should be used whenever we care only about function values, and not about operators. This basically means inside of expression contexts. They encapsulate all valid uses of operators inside of them, and so it is not necessary to expose Feo stimuli at the same level as Fea, Fem, and Fed when we might use these values to apply functions. This is for the expression case, where it makes a difference whether a function value is monadic, ambivalent, or dyadic. Fem and Fea could be confused, but they are in fact completely disjoint mappings. Fem are all those valid function expressions which are monadic *only*, which is to say, cannot accept a left argument. Ambivalent functions are captured by Fea, which may accept a left argument, but do not need one syntactically. The Fed stimuli captures the cases where there is no valid monadic form, and the function expression requires a left argument.

In all of the above function stimuli, Fea, Fem, and Fed, we allow for an additional "a" to be appeneded to each name to indicate that the expression also saw an axis response. This indicates that the expression accepts an axis specification. We do not allow for an "a" to be appended to the end of either the *Fe* or *Feo* stimuli.

Finally, we have the odd one out, Feo. This is a special enumeration that is only required inside of the function expression enumeration. Everywhere else it suffices to use the Fe stimuli or the set of function stimuli Fea, Fem, and Fed to capture the desired behavior. Feo needs to exist inside of the Function Expressions in order to capture the concept of parenthesized operators, which is a forward-looking extension of the Dyalog APL system (part of which is already implemented in version 14.0 of the interpreter, but not all). By enabling this separate element, we allow for operators to receive bindings through the Fe stimuli, as well as using operators that are inside of parentheses when doing the normal enumeration.

The Feo stimuli will normally be listed just as Feo, because in most cases it is illegal. However, you will not in the list of the recursive stimuli that Feo takes a parameter [op1 op2 ...]. This indicates that we can provide a paramter to Feo, which corresponds to the parameter that we give in the *oper* response. This allows us to know what the equivalent operator is. This is just a slightly more manageable way of enumerating the operators while not requiring that enumeration until we need to use it. That is, if we know that any Feo is going to be illegal, we need only list Feo and mark it as such. If we know that the operators are going to be useful, then we can enumerate them all explicitly. Again, this basically only affects the function enumeration. It is a simple, convenient syntactic abstraction and nothing more. We use the list notation for this because it allows us to list a number of common operators together without requiring a separate line for their enumeration. We do not use the list notation in the *oper[op]* response.

Table 73. Source Input Enumeration: Function Expressions

Sequence	Response	Equivalent	Trace
E	illegal		
Ea	wait		4
Fea	illegal		
Feaa	illegal		
Fed	illegal		
Feda	illegal		
Fem	illegal		
Fema	illegal		
Feo	illegal		
Fn	ambivalent		4

Sequence	Response	Equivalent	Trace
Fnm	oper[Fnm]		4, D5
Fnd	oper[Fnd]	Fnm	4, D5
[	Syntax Error	empty	4, 10
]	Syntax Error	empty	4, 10
(	wait		4
)	Syntax Error	empty	4, 10
←	Syntax Error	empty	4, 10
⍨	oper[⍨]	Fnm	4, D5
∘	oper[∘]		4, D5
¨	oper[¨]	Fnm	4, D5
.	oper[.]	Fnm	4, D5
⍣	oper[⍣]	Fnm	4, D5
/	dyadic axis, oper[/]	Da	4, D5
⌿	dyadic axis, oper[⌿]	Da	4, D5
\	dyadic axis, oper[\]	Da	4, D5
⍀	dyadic axis, oper[⍀]	Da	4, D5
Break	Interrupt	empty, top-level	D3
D	dyadic	Fn	4
Da	dyadic axis		4
M	ambivalent	Fn	4
Ma	ambivalent axis	Da	4
Vi	Value Error	empty	4, 10
Vf	ambivalent	Fn	4
Vo[op]	oper[op]	Fnm	4, D5
Vu	Value Error	empty	4, 10

Table 74. Source Input Enumeration: Function Expressions, Ea

Sequence	Response	Equivalent	Trace
Ea E	illegal		
Ea Ea	illegal		
Ea Fea	illegal		
Ea Feaa	illegal		
Ea Fed	illegal		

Sequence	Response	Equivalent	Trace
Ea Feda	illegal		
Ea Fem	illegal		
Ea Fema	illegal		
Ea Feo	illegal		
Ea Fn	Syntax Error	empty	4, 10
Ea Fnm	ambivalent	Fn	4
Ea Fnd	wait		4
Ea [	Syntax Error	empty	4, 10
Ea]	Syntax Error	empty	4, 10
Ea (	wait		4
Ea)	Syntax Error	empty	4, 10
Ea ←	Syntax Error	empty	4, 10
Ea ⍨	Syntax Error	empty	4, 10
Ea ∘	wait		4
Ea ¨	Syntax Error	empty	4, 10
Ea .	Syntax Error	empty	4, 10
Ea ⍣	Syntax Error	empty	4, 10
Ea /	Syntax Error	empty	4, 10
Ea ⌿	Syntax Error	empty	4, 10
Ea \	Syntax Error	empty	4, 10
Ea ⍀	Syntax Error	empty	4, 10
Ea Break	Interrupt	empty, top-level	D3
Ea D	Syntax Error	empty	4, 10
Ea Da	Syntax Error	empty	4, 10
Ea M	Syntax Error	empty	4, 10
Ea Ma	Syntax Error	empty	4, 10
Ea Vi	illegal		
Ea Vf	Syntax Error	empty	4, 10
Ea Vo[∘]	wait	Ea ∘	4, D5
Ea Vo[Fnm]	ambivalent	Ea Fnm	4
Ea Vo[Fnd]	wait	Ea Fnd	4
Ea Vo[⍨ ¨ . ⍣ / ⌿ \ ⍀]	Syntax Error	empty	4, 10, D5
Ea Vu	illegal		

Table 75. Source Input Enumeration: Function Expressions, Fn

Sequence	Response	Equivalent	Trace
Fn E	illegal		
Fn Ea	Syntax Error	empty	4, 10
Fn Fea	illegal		
Fn Feaa	illegal		
Fn Fed	illegal		
Fn Feda	illegal		
Fn Fem	illegal		
Fn Fema	illegal		
Fn Feo	illegal		
Fn Fn	Syntax Error	empty	4, 10
Fn Fnm	ambivalent	Fn	4
Fn Fnd	wait	Ea Fnd	4
Fn [	Syntax Error	empty	4, 10
Fn]	Syntax Error	empty	4, 10
Fn (	wait		4
Fn)	Syntax Error	empty	4, 10
Fn ←	Syntax Error	empty	4, 10
Fn ¨	ambivalent	Fn	4, 10
Fn ∘	wait		4
Fn ¨	ambivalent	Fn	4, 10
Fn .	wait		4
Fn ⍤	wait	Fn Fnd	4
Fn /	ambivalent axis	Ma	4
Fn ⌿	ambivalent axis	Ma	4
Fn \	monadic axis		4, D5
Fn ⍀	monatic axis	Fn \	4, D5
Fn Break	Interrupt	empty, top-level	D3
Fn D	Syntax Error	empty	4, 10
Fn Da	Syntax Error	empty	4, 10
Fn M	Syntax Error	empty	4, 10
Fn Ma	Syntax Error	empty	4, 10
Fn Vi	Value Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fn Vf	Syntax Error	empty	4, 10
Fn Vo[Fnm]	ambivalent	Fn Fnm	4, 10
Fn Vo[Fnd]	wait	Fn Fnd	4, 10
Fn Vo[¨ ¨]	ambivalent	Fn	4, 10, D5
Fn Vo[.]	wait	Fn .	4, 10, D5
Fn Vo[∘]	wait	Fn ∘	4, 10, D5
Fn Vo[¨*]	wait	Fn Fnd	4, 10, D5
Fn Vo[/ ⌿]	ambivalent axis	Fn /	4, 10, D5
Fn Vo[\ ⍀]	monadic axis	Fn \	4, 10, D5
Fn Vu	Value Error	empty	4, 10

Table 76. Source Input Enumeration: Function Expressions, Fnm

Sequence	Response	Equivalent	Trace
Fnm E	illegal		
Fnm Ea	Syntax Error	empty	4, 10
Fnm Fea	illegal		
Fnm Feaa	illegal		
Fnm Fed	illegal		
Fnm Feda	illegal		
Fnm Fem	illegal		
Fnm Fema	illegal		
Fnm Feo	illegal		
Fnm Fn	Syntax Error	empty	4, 10
Fnm Fnm	Syntax Error	empty	4, 10
Fnm Fnd	Syntax Error	empty	4, 10
Fnm [	Syntax Error	empty	4, 10
Fnm]	Syntax Error	empty	4, 10
Fnm (	Syntax Error	empty	4, 10
Fnm)	Syntax Error	empty	4, 10
Fnm ←	Syntax Error	empty	4, 10
Fnm ¨	Syntax Error	empty	4, 10
Fnm ∘	Syntax Error	empty	4, 10
Fnm ¨	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fnm .	Syntax Error	empty	4, 10
Fnm ⁑	Syntax Error	empty	4, 10
Fnm /	Syntax Error	empty	4, 10
Fnm ⁄	Syntax Error	empty	4, 10
Fnm \	Syntax Error	empty	4, 10
Fnm ↚	Syntax Error	empty	4, 10
Fnm Break	Interrupt	empty, top-level	D3
Fnm D	Syntax Error	empty	4, 10
Fnm Da	Syntax Error	empty	4, 10
Fnm M	Syntax Error	empty	4, 10
Fnm Ma	Syntax Error	empty	4, 10
Fnm Vi	Value Error	empty	4, 10
Fnm Vf	Syntax Error	empty	4, 10
Fnm Vo	Syntax Error	empty	4, 10
Fnm Vu	Syntax Error	empty	4, 10

Table 77. Source Input Enumeration: Function Expressions, (

Sequence	Response	Equivalent	Trace
(E	illegal		
(Ea	subsumed	(Fe	
(Fea	wait		4
(Feaa	wait		4
(Fed	wait		4
(Feda	wait		4
(Fem	wait		4
(Fema	wait		4
(Feo[op]	wait		4, D5
(Fn	subsumed	(Fe	
(Fnm	subsumed	(Fe	
(Fnd	subsumed	(Fe	
([	subsumed	(Fe	
( ]	subsumed	(Fe	
((	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
( )	Syntax Error	empty	4, 10
(←	subsumed	(Fe	
(¨	subsumed	(Fe	
(∘	subsumed	(Fe	
(¨	subsumed	(Fe	
(.	subsumed	(Fe	
(¨	subsumed	(Fe	
(/	subsumed	(Fe	
(≠	subsumed	(Fe	
(\	subsumed	(Fe	
(↛	subsumed	(Fe	
(Break	Interrupt	empty, top-level	D3
(D	subsumed	(Fe	
(Da	subsumed	(Fe	
(M	subsumed	(Fe	
(Ma	subsumed	(Fe	
(Vi	subsumed	(Fe	
(Vf	wait		4
(Vo[op]	wait		4
(Vu	wait		4

Table 78. Source Input Enumeration: Function Expressions, ∘

Sequence	Response	Equivalent	Trace
∘ E	illegal		
∘ Ea	Syntax Error	empty	4, 10
∘ Fea	illegal		
∘ Feaa	illegal		
∘ Fed	illegal		
∘ Feda	illegal		
∘ Fem	illegal		
∘ Fema	illegal		
∘ Feo	illegal		
∘ Fn	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
∘ Fnm	Syntax Error	empty	4, 10
∘ Fnd	Syntax Error	empty	4, 10
∘ [	Syntax Error	empty	4, 10
∘]	Syntax Error	empty	4, 10
∘ (	Syntax Error	empty	4, 10
∘)	Syntax Error	empty	4, 10
∘ ←	Syntax Error	empty	4, 10
∘ ⍨	Syntax Error	empty	4, 10
∘ ∘	Syntax Error	empty	4, 10
∘ ¨	Syntax Error	empty	4, 10
∘ .	oper[∘.]	Fn .	4, D5
∘ ⍣	Syntax Error	empty	4, 10
∘ /	Syntax Error	empty	4, 10
∘ ≠	Syntax Error	empty	4, 10
∘ \	Syntax Error	empty	4, 10
∘ ⍀	Syntax Error	empty	4, 10
∘ Break	Interrupt	empty, top-level	D3
∘ D	Syntax Error	empty	4, 10
∘ Da	Syntax Error	empty	4, 10
∘ M	Syntax Error	empty	4, 10
∘ Ma	Syntax Error	empty	4, 10
∘ Vi	Syntax Error	empty	4, 10
∘ Vf	Syntax Error	empty	4, 10
∘ Vo[.]	oper[∘.]	∘ .	4, D5
∘ Vo	Syntax Error	empty	4, 10
∘ Vu	Value Error	empty	4, 10

Table 79. Source Input Enumeration: Function Expressions, Da

Sequence	Response	Equivalent	Trace
Da E	illegal		
Da Ea	Syntax Error	empty	4, 10
Da Fea	illegal		
Da Feaa	illegal		

Sequence	Response	Equivalent	Trace
Da Fed	illegal		
Da Feda	illegal		
Da Fem	illegal		
Da Fema	illegal		
Da Feo	illegal		
Da Fn	Syntax Error	empty	4, 10
Da Fnm	ambivalent	Fn	4
Da Fnd	wait	Ea Fnd	4
Da [	wait		4
Da]	Syntax Error	empty	4, 10
Da (	wait		4
Da)	Syntax Error	empty	4, 10
Da ←	Syntax Error	empty	4, 10
Da ⍨	ambivalent	Fn	4
Da ∘	wait		4
Da ¨	dyadic	D	4
Da .	wait	Fn .	4
Da ⍣	wait		4
Da /	ambivalent axis	Ma	4
Da ⌿	ambivalent axis	Ma	4
Da \	monadic axis	Fn \	4
Da ⍀	monadic axis	Da \	4
Da Break	Interrupt	empty, top-level	D3
Da D	Syntax Error	empty	4, 10
Da Da	Syntax Error	empty	4, 10
Da M	Syntax Error	empty	4, 10
Da Ma	Syntax Error	empty	4, 10
Da Vi	Value Error	empty	4, 10
Da Vf	Syntax Error	empty	4, 10
Da Vo[Fnm]	ambivalent	Da Fnm	4, D5
Da Vo[Fnd]	wait	Da Fnd	4, D5
Da Vo[⍨]	ambivalent	Da ⍨	4, D5
Da Vo[∘]	wait	Da ∘	4, D5

Sequence	Response	Equivalent	Trace
Da Vo[¨]	dyadic	Da ¨	4, D5
Da Vo[.]	wait	Da .	4, D5
Da Vo[⍣]	wait	Da ⍣	4, D5
Da Vo[/ ≠]	ambivalent axis	Da /	4, D5
Da Vo[\ ⍀]	monadic axis	Da \	4, D5
Da Vu	Value Error	empty	4, 10

Table 80. Source Input Enumeration: Function Expressions, Ea Fnd

Sequence	Response	Equivalent	Trace
Ea Fnd E	illegal		
Ea Fnd Ea	ambivalent	Fn	4
Ea Fnd Fea	illegal		
Ea Fnd Feaa	illegal		
Ea Fnd Fed	illegal		
Ea Fnd Feda	illegal		
Ea Fnd Fem	illegal		
Ea Fnd Fema	illegal		
Ea Fnd Feo	illegal		
Ea Fnd Fn	amblivalent	Fn	4
Ea Fnd Fnm	Syntax Error	empty	4, 10
Ea Fnd Fnd	Syntax Error	empty	4, 10
Ea Fnd [	Syntax Error	empty	4, 10
Ea Fnd]	Syntax Error	empty	4, 10
Ea Fnd (	wait		4
Ea Fnd)	Syntax Error	empty	4, 10
Ea Fnd ←	Syntax Error	empty	4, 10
Ea Fnd ⍨	Syntax Error	empty	4, 10
Ea Fnd ∘	Syntax Error	empty	4, 10
Ea Fnd ¨	Syntax Error	empty	4, 10
Ea Fnd .	Syntax Error	empty	4, 10
Ea Fnd ⍣	Syntax Error	empty	4, 10
Ea Fnd /	ambivalent	Fn	4
Ea Fnd ≠	ambivalent	Fn	4

Sequence	Response	Equivalent	Trace
Ea Fnd \	ambivalent	Fn	4
Ea Fnd ↚	ambivalent	Fn	4
Ea Fnd Break	Interrupt	empty, top-level	D3
Ea Fnd D	ambivalent	Fn	4
Ea Fnd Da	ambivalent	Fn	4
Ea Fnd M	ambivalent	Fn	4
Ea Fnd Ma	ambivalent	Fn	4
Ea Fnd Vi	Value Error	empty	4, 10
Ea Fnd Vf	ambivalent	Fn	4
Ea Fnd Vo	Syntax Error	empty	4, 10
Ea Fnd Vu	Value Error	empty	4, 10

Table 81. Source Input Enumeration: Function Expressions, Ea (

Sequence	Response	Equivalent	Trace
Ea (E	illegal		
Ea (Ea	Syntax Error	empty	4, 10
Ea (Fea	Syntax Error	empty	4, 19
Ea (Feaa	Syntax Error	empty	4, 19
Ea (Fed	Syntax Error	empty	4, 19
Ea (Feda	Syntax Error	empty	4, 19
Ea (Fem	Syntax Error	empty	4, 19
Ea (Fema	Syntax Error	empty	4, 19
Ea (Feo[Fnm]	wait		4
Ea (Feo[Fnd]	wait		4
Ea (Feo[̃ ̈ . ̇ / ≠ \ ↚]	Syntax Error	empty	4, 10
Ea (Feo[∘]	wait		4
Ea (Fn	subsumed	Ea (Feo	
Ea (Fnm	subsumed	Ea (Feo	
Ea (Fnd	subsumed	Ea (Feo	
Ea ([	subsumed	Ea (Feo	
Ea ( ]	subsumed	Ea (Feo	
Ea ((	subsumed	Ea (Feo	
Ea ( )	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Ea (←	subsumed	Ea (Feo	
Ea (⍨	subsumed	Ea (Feo	
Ea (∘	subsumed	Ea (Feo	
Ea (¨	subsumed	Ea (Feo	
Ea (.	subsumed	Ea (Feo	
Ea (⍣	subsumed	Ea (Feo	
Ea (/	subsumed	Ea (Feo	
Ea (⌿	subsumed	Ea (Feo	
Ea (\	subsumed	Ea (Feo	
Ea (⍀	subsumed	Ea (Feo	
Ea (Break	Interrupt	empty, top-level	D3
Ea (D	subsumed	Ea (Feo	
Ea (Da	subsumed	Ea (Feo	
Ea (M	subsumed	Ea (Feo	
Ea (Ma	subsumed	Ea (Feo	
Ea (Vi	subsumed	Ea (Feo	
Ea (Vf	wait		4, D5
Ea (Vo[∘]	wait		4, D5
Ea (Vo[Fnm]	wait		4, D5
Ea (Vo[Fnd]	wait		4, D5
Ea (Vo[⍨ ¨ . ⍣ / ⌿ \ ⍀]	wait	Ea (Vf	4, D5
Ea (Vu	wait		4, D5

Table 82. Source Input Enumeration: Function Expressions, Ea ∘

Sequence	Response	Equivalent	Trace
Ea ∘ E	illegal		
Ea ∘ Ea	Syntax Error	empty	4, 10
Ea ∘ Fea	illegal		
Ea ∘ Feaa	illegal		
Ea ∘ Fed	illegal		
Ea ∘ Feda	illegal		
Ea ∘ Fem	illegal		
Ea ∘ Fema	illegal		

Sequence	Response	Equivalent	Trace
Ea ∘ Feo	illegal		
Ea ∘ Fn	monadic		4
Ea ∘ Fnm	Syntax Error	empty	4, 10
Ea ∘ Fnd	Syntax Error	empty	4, 10
Ea ∘ [	Syntax Error	empty	4, 10
Ea ∘]	Syntax Error	empty	4, 10
Ea ∘ (	wait		4
Ea ∘)	Syntax Error	empty	4, 10
Ea ∘ ←	Syntax Error	empty	4, 10
Ea ∘ ¨̃	Syntax Error	empty	4, 10
Ea ∘ ∘	Syntax Error	empty	4, 10
Ea ∘ ¨	Syntax Error	empty	4, 10
Ea ∘ .	Syntax Error	empty	4, 10
Ea ∘ ¨⋆	Syntax Error	empty	4, 10
Ea ∘ /	monadic	Ea ∘ Fn	4
Ea ∘ ⌿	monadic	Ea ∘ Fn	4
Ea ∘ \	monadic	Ea ∘ Fn	4
Ea ∘ ⍀	monadic	Ea ∘ Fn	4
Ea ∘ Break	Interrupt	empty, top-level	D3
Ea ∘ D	monadic	Ea ∘ Fn	4
Ea ∘ Da	monadic	Ea ∘ Fn	4
Ea ∘ M	monadic	Ea ∘ Fn	4
Ea ∘ Ma	monadic	Ea ∘ Fn	4
Ea ∘ Vi	Value Error	empty	4, 10
Ea ∘ Vf	monadic	Ea ∘ Fn	4
Ea ∘ Vo	Syntax Error	empty	4, 10
Ea ∘ Vu	Value Error	empty	4, 10

Table 83. Source Input Enumeration: Function Expressions, Fn (

Sequence	Response	Equivalent	Trace
Fn (E	illegal		
Fn (Ea	Syntax Error	empty	4, 10
Fn (Fea	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fn (Feaa	Syntax Error	empty	4, 10
Fn (Fed	Syntax Error	empty	4, 10
Fn (Feda	Syntax Error	empty	4, 10
Fn (Fem	Syntax Error	empty	4, 10
Fn (Fema	Syntax Error	empty	4, 10
Fn (Feo[Fnm]	wait		4
Fn (Feo[Fnd]	wait		4
Fn (Feo[˜̈]	wait		4
Fn (Feo[˚]	wait		4
Fn (Feo[¨]	wait		4
Fn (Feo[˙]	wait		4
Fn (Feo[̈*]	wait		4
Fn (Feo[/ ≠]	wait		4
Fn (Feo[\ ∤]	wait		4
Fn (Fn	subsumed	Fn (Fe	
Fn (Fnm	subsumed	Fn (Fe	
Fn (Fnd	subsumed	Fn (Fe	
Fn ([	subsumed	Fn (Fe	
Fn ( ]	subsumed	Fn (Fe	
Fn ((	subsumed	Fn (Fe	
Fn ( )	Syntax Error	empty	4, 10
Fn (←	subsumed	Fn (Fe	
Fn (˜̈	subsumed	Fn (Fe	
Fn (˚	subsumed	Fn (Fe	
Fn (¨	subsumed	Fn (Fe	
Fn (˙	subsumed	Fn (Fe	
Fn (̈*	subsumed	Fn (Fe	
Fn (/	subsumed	Fn (Fe	
Fn (≠	subsumed	Fn (Fe	
Fn (\	subsumed	Fn (Fe	
Fn (∤	subsumed	Fn (Fe	
Fn (Break	Interrupt	empty, top-level	D3
Fn (D	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Da	subsumed	Fn (Fe	
Fn (M	subsumed	Fn (Fe	
Fn (Ma	subsumed	Fn (Fe	
Fn (Vi	subsumed	Fn (Fe	
Fn (Vf	wait		4
Fn (Vo[Fnm]	wait		4
Fn (Vo[Fnd]	wait		4
Fn (Vo[¨˜]	wait		4, D5
Fn (Vo[∘]	wait		4, D5
Fn (Vo[¨]	wait		4, D5
Fn (Vo[.]	wait		4, D5
Fn (Vo[⍣]	wait		4, D5
Fn (Vo[/ ≠]	wait		4, D5
Fn (Vo[\ ≠]	wait		4, D5
Fn (Vu	wait		4

Table 84. Source Input Enumeration: Function Expressions, Fn ∘

Sequence	Response	Equivalent	Trace
Fn ∘ E	illegal		
Fn ∘ Ea	monadic	Ea ∘ Fn	4
Fn ∘ Fea	illegal		
Fn ∘ Feaa	illegal		
Fn ∘ Fed	illegal		
Fn ∘ Feda	illegal		
Fn ∘ Fem	illegal		
Fn ∘ Fema	illegal		
Fn ∘ Feo	illegal		
Fn ∘ Fn	ambivalent	Fn	4
Fn ∘ Fnm	Syntax Error	empty	4, 10
Fn ∘ Fnd	Syntax Error	empty	4, 10
Fn ∘ [	Syntax Error	empty	4, 10
Fn ∘]	Syntax Error	empty	4, 10
Fn ∘ (	wait		4

Sequence	Response	Equivalent	Trace
Fn ∘)	Syntax Error	empty	4, 10
Fn ∘ ←	Syntax Error	empty	4, 10
Fn ∘ ⍨	Syntax Error	empty	4, 10
Fn ∘ ∘	Syntax Error	empty	4, 10
Fn ∘ ¨	Syntax Error	empty	4, 10
Fn ∘ .	Syntax Error	empty	4, 10
Fn ∘ ⍣	Syntax Error	empty	4, 10
Fn ∘ /	Syntax Error	empty	4, 10
Fn ∘ ⌿	Syntax Error	empty	4, 10
Fn ∘ \	Syntax Error	empty	4, 10
Fn ∘ ⍀	Syntax Error	empty	4, 10
Fn ∘ Break	Interrupt	empty, top-level	D3
Fn ∘ D	Syntax Error	empty	4, 10
Fn ∘ Da	Syntax Error	empty	4, 10
Fn ∘ M	ambivalent	Fn	4
Fn ∘ Ma	ambivalent	Fn	4
Fn ∘ Vi	Value Error	empty	4, 10
Fn ∘ Vf	ambivalent	Fn	4
Fn ∘ Vo	Syntax Error	empty	4, 10
Fn ∘ Vu	Value Error	empty	4, 10

Table 85. Source Input Enumeration: Function Expressions, Fn .

Sequence	Response	Equivalent	Trace
Fn . E	illegal		
Fn . Ea	Syntax Error	empty	4, 10
Fn . Fea	illegal		
Fn . Feaa	illegal		
Fn . Fed	illegal		
Fn . Feda	illegal		
Fn . Fem	illegal		
Fn . Fema	illegal		
Fn . Feo	illegal		
Fn . Fn	dyadic	D	4

Sequence	Response	Equivalent	Trace
Fn . Fnm	Syntax Error	empty	4, 10
Fn . Fnd	Syntax Error	empty	4, 10
Fn . [	Syntax Error	empty	4, 10
Fn .]	Syntax Error	empty	4, 10
Fn . (	wait		4
Fn .)	Syntax Error	empty	4, 10
Fn . ←	Syntax Error	empty	4, 10
Fn . ¨̃	Syntax Error	empty	4, 10
Fn . ∘	Syntax Error	empty	4, 10
Fn . ¨	Syntax Error	empty	4, 10
Fn . .	Syntax Error	empty	4, 10
Fn . ¨*	Syntax Error	empty	4, 10
Fn . /	dyadic	Fn . Fn	4
Fn . ≠	dyadic	Fn . Fn	4
Fn . \	dyadic	Fn . Fn	4
Fn . ⍀	dyadic	Fn . Fn	4
Fn . Break	Interrupt	empty, top-level	D3
Fn . D	dyadic	Fn . Fn	4
Fn . Da	dyadic	Fn . Fn	4
Fn . M	dyadic	Fn . Fn	4
Fn . Ma	dyadic	Fn . Fn	4
Fn . Vi	Value Error	empty	4, 10
Fn . Vf	dyadic	Fn . Fn	4
Fn . Vo	Syntax Error	empty	4, 10
Fn . Vu	Value Error	empty	4, 10

Table 86. Source Input Enumeration: Function Expressions, Fn \

Sequence	Response	Equivalent	Trace
Fn \ E	illegal		
Fn \ Ea	Syntax Error	empty	4, 10
Fn \ Fea	illegal		
Fn \ Feaa	illegal		
Fn \ Fed	illegal		

Sequence	Response	Equivalent	Trace
Fn \ Feda	illegal		
Fn \ Fem	illegal		
Fn \ Fema	illegal		
Fn \ Feo	illegal		
Fn \ Fn	Syntax Error	empty	4, 10
Fn \ Fnm	ambivalent	Fn	4
Fn \ Fnd	wait	Ea Fnd	4
Fn \ [	wait		4
Fn \ ]	Syntax Error	empty	4, 10
Fn \ (	wait		4
Fn \ )	Syntax Error	empty	4, 10
Fn \ ←	Syntax Error	empty	4, 10
Fn \ ¨˜	Syntax Error	empty	4, 10
Fn \ ∘	wait		4
Fn \ ¨	monadic	Ea ∘ Fn	4
Fn \ .	wait	Fn .	4, 10
Fn \ ¨⍟	wait		4
Fn \ /	ambivalent axis	Fn /	4
Fn \ ⌿	ambivalent axis	Fn /	4
Fn \ \	monadic axis	Fn \	4
Fn \ ⍀	monadic axis	Fn \	4
Fn \ Break	Interrupt	empty, top-level	D3
Fn \ D	Syntax Error	empty	4, 10
Fn \ Da	Syntax Error	empty	4, 10
Fn \ M	Syntax Error	empty	4, 10
Fn \ Ma	Syntax Error	empty	4, 10
Fn \ Vi	Value Error	empty	4, 10
Fn \ Vf	Syntax Error	empty	4, 10
Fn \ Vo[Fnm]	ambivalent	Fn \ Fnm	4, 10
Fn \ Vo[Fnd]	wait	Fn \ Fnd	4, 10
Fn \ Vo[¨˜]	Syntax Error	empty	4, 10, D5
Fn \ Vo[¨]	ambivalent	Fn \ ¨	4, 10, D5
Fn \ Vo[.]	wait	Fn \ .	4, 10, D5

Sequence	Response	Equivalent	Trace
Fn \ Vo[∘]	wait	Fn \ ∘	4, 10, D5
Fn \ Vo[⍣]	wait	Fn \ ⍣	4, 10, D5
Fn \ Vo[/ ≠]	ambivalent axis	Fn /	4, 10, D5
Fn \ Vo[\ ⍀]	monadic axis	Fn \	4, 10, D5
Fn \ Vu	Value Error	empty	4, 10

Table 87. Source Input Enumeration: Function Expressions, (Fea

Sequence	Response	Equivalent	Trace
(Fea E	illegal		
(Fea Ea	subsumed	(Fe	
(Fea Fea	subsumed	(Fe	
(Fea Feaa	subsumed	(Fe	
(Fea Fed	subsumed	(Fe	
(Fea Feda	subsumed	(Fe	
(Fea Fem	subsumed	(Fe	
(Fea Fema	subsumed	(Fe	
(Fea Feo[op]	subsumed	(Fe	
(Fea Fn	subsumed	(Fe	
(Fea Fnm	subsumed	(Fe	
(Fea Fnd	subsumed	(Fe	
(Fea [	subsumed	(Fe	
(Fea]	subsumed	(Fe	
(Fea (	subsumed	(Fe	
(Fea)	ambivalent	Fn	4
(Fea ←	subsumed	(Fe	
(Fea ⍨	subsumed	(Fe	
(Fea ∘	subsumed	(Fe	
(Fea ¨	subsumed	(Fe	
(Fea .	subsumed	(Fe	
(Fea ⍣	subsumed	(Fe	
(Fea /	subsumed	(Fe	
(Fea ≠	subsumed	(Fe	
(Fea \	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Fea ↚	subsumed	(Fe	
(Fea Break	Interrupt	empty, top-level	D3
(Fea D	subsumed	(Fe	
(Fea Da	subsumed	(Fe	
(Fea M	subsumed	(Fe	
(Fea Ma	subsumed	(Fe	
(Fea Vi	subsumed	(Fe	
(Fea Vf	subsumed	(Fe	
(Fea Vo	subsumed	(Fe	
(Fea Vu	subsumed	(Fe	

Table 88. Source Input Enumeration: Function Expressions, (Feaa

Sequence	Response	Equivalent	Trace
(Feaa E	illegal		
(Feaa Ea	subsumed	(Fe	
(Feaa Fea	subsumed	(Fe	
(Feaa Feaa	subsumed	(Fe	
(Feaa Fed	subsumed	(Fe	
(Feaa Feda	subsumed	(Fe	
(Feaa Fem	subsumed	(Fe	
(Feaa Fema	subsumed	(Fe	
(Feaa Feo[op]	subsumed	(Fe	
(Feaa Fn	subsumed	(Fe	
(Feaa Fnm	subsumed	(Fe	
(Feaa Fnd	subsumed	(Fe	
(Feaa [	subsumed	(Fe	
(Feaa]	subsumed	(Fe	
(Feaa (	subsumed	(Fe	
(Feaa)	ambivalent axis	Ma	4
(Feaa ←	subsumed	(Fe	
(Feaa ⍨	subsumed	(Fe	
(Feaa ∘	subsumed	(Fe	
(Feaa ⍤	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Feaa .	subsumed	(Fe	
(Feaa ¨	subsumed	(Fe	
(Feaa /	subsumed	(Fe	
(Feaa ≠	subsumed	(Fe	
(Feaa \	subsumed	(Fe	
(Feaa ∤	subsumed	(Fe	
(Feaa Break	Interrupt	empty, top-level	D3
(Feaa D	subsumed	(Fe	
(Feaa Da	subsumed	(Fe	
(Feaa M	subsumed	(Fe	
(Feaa Ma	subsumed	(Fe	
(Feaa Vi	subsumed	(Fe	
(Feaa Vf	subsumed	(Fe	
(Feaa Vo	subsumed	(Fe	
(Feaa Vu	subsumed	(Fe	

Table 89. Source Input Enumeration: Function Expressions, (Fed

Sequence	Response	Equivalent	Trace
(Fed E	illegal		
(Fed Ea	subsumed	(Fe	
(Fed Fea	subsumed	(Fe	
(Fed Feaa	subsumed	(Fe	
(Fed Fed	subsumed	(Fe	
(Fed Feda	subsumed	(Fe	
(Fed Fem	subsumed	(Fe	
(Fed Fema	subsumed	(Fe	
(Fed Feo[op]	subsumed	(Fe	
(Fed Fn	subsumed	(Fe	
(Fed Fnm	subsumed	(Fe	
(Fed Fnd	subsumed	(Fe	
(Fed [	subsumed	(Fe	
(Fed]	subsumed	(Fe	
(Fed (	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Fed)	dyadic	D	4
(Fed ←	subsumed	(Fe	
(Fed ⍨	subsumed	(Fe	
(Fed ∘	subsumed	(Fe	
(Fed ¨	subsumed	(Fe	
(Fed .	subsumed	(Fe	
(Fed ⍣	subsumed	(Fe	
(Fed /	subsumed	(Fe	
(Fed ⌿	subsumed	(Fe	
(Fed \	subsumed	(Fe	
(Fed ⍀	subsumed	(Fe	
(Fed Break	Interrupt	empty, top-level	D3
(Fed D	subsumed	(Fe	
(Fed Da	subsumed	(Fe	
(Fed M	subsumed	(Fe	
(Fed Ma	subsumed	(Fe	
(Fed Vi	subsumed	(Fe	
(Fed Vf	subsumed	(Fe	
(Fed Vo	subsumed	(Fe	
(Fed Vu	subsumed	(Fe	

Table 90. Source Input Enumeration: Function Expressions, (Feda

Sequence	Response	Equivalent	Trace
(Feda E	illegal		
(Feda Ea	subsumed	(Fe	
(Feda Fea	subsumed	(Fe	
(Feda Feaa	subsumed	(Fe	
(Feda Fed	subsumed	(Fe	
(Feda Feda	subsumed	(Fe	
(Feda Fem	subsumed	(Fe	
(Feda Fema	subsumed	(Fe	
(Feda Feo[op]	subsumed	(Fe	
(Feda Fn	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Feda Fnm	subsumed	(Fe	
(Feda Fnd	subsumed	(Fe	
(Feda [	subsumed	(Fe	
(Feda]	subsumed	(Fe	
(Feda (	subsumed	(Fe	
(Feda)	dyadic axis	Da	4
(Feda ←	subsumed	(Fe	
(Feda ⍨	subsumed	(Fe	
(Feda ∘	subsumed	(Fe	
(Feda ⍤	subsumed	(Fe	
(Feda .	subsumed	(Fe	
(Feda ⍣	subsumed	(Fe	
(Feda /	subsumed	(Fe	
(Feda ⌿	subsumed	(Fe	
(Feda \	subsumed	(Fe	
(Feda ⍀	subsumed	(Fe	
(Feda Break	Interrupt	empty, top-level	D3
(Feda D	subsumed	(Fe	
(Feda Da	subsumed	(Fe	
(Feda M	subsumed	(Fe	
(Feda Ma	subsumed	(Fe	
(Feda Vi	subsumed	(Fe	
(Feda Vf	subsumed	(Fe	
(Feda Vo	subsumed	(Fe	
(Feda Vu	subsumed	(Fe	

Table 91. Source Input Enumeration: Function Expressions, (Fem

Sequence	Response	Equivalent	Trace
(Fem E	illegal		
(Fem Ea	subsumed	(Fe	
(Fem Fea	subsumed	(Fe	
(Fem Feaa	subsumed	(Fe	
(Fem Fed	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Fem Feda	subsumed	(Fe	
(Fem Fem	subsumed	(Fe	
(Fem Fema	subsumed	(Fe	
(Fem Feo[op]	subsumed	(Fe	
(Fem Fn	subsumed	(Fe	
(Fem Fnm	subsumed	(Fe	
(Fem Fnd	subsumed	(Fe	
(Fem [	subsumed	(Fe	
(Fem]	subsumed	(Fe	
(Fem (	subsumed	(Fe	
(Fem)	monadic	Ea ∘ Fn	4
(Fem ←	subsumed	(Fe	
(Fem ⍨	subsumed	(Fe	
(Fem ∘	subsumed	(Fe	
(Fem ¨	subsumed	(Fe	
(Fem .	subsumed	(Fe	
(Fem ⍣	subsumed	(Fe	
(Fem /	subsumed	(Fe	
(Fem ≠	subsumed	(Fe	
(Fem \	subsumed	(Fe	
(Fem ⍀	subsumed	(Fe	
(Fem Break	Interrupt	empty, top-level	D3
(Fem D	subsumed	(Fe	
(Fem Da	subsumed	(Fe	
(Fem M	subsumed	(Fe	
(Fem Ma	subsumed	(Fe	
(Fem Vi	subsumed	(Fe	
(Fem Vf	subsumed	(Fe	
(Fem Vo	subsumed	(Fe	
(Fem Vu	subsumed	(Fe	

Table 92. Source Input Enumeration: Function Expressions, (Fema

Sequence	Response	Equivalent	Trace
(Fema E	illegal		
(Fema Ea	subsumed	(Fe	
(Fema Fea	subsumed	(Fe	
(Fema Feaa	subsumed	(Fe	
(Fema Fed	subsumed	(Fe	
(Fema Feda	subsumed	(Fe	
(Fema Fem	subsumed	(Fe	
(Fema Fema	subsumed	(Fe	
(Fema Feo[op]	subsumed	(Fe	
(Fema Fn	subsumed	(Fe	
(Fema Fnm	subsumed	(Fe	
(Fema Fnd	subsumed	(Fe	
(Fema [	subsumed	(Fe	
(Fema]	subsumed	(Fe	
(Fema (	subsumed	(Fe	
(Fema)	monadic axis	Fn \	4
(Fema ←	subsumed	(Fe	
(Fema ⍨	subsumed	(Fe	
(Fema ∘	subsumed	(Fe	
(Fema ¨	subsumed	(Fe	
(Fema .	subsumed	(Fe	
(Fema ⍣	subsumed	(Fe	
(Fema /	subsumed	(Fe	
(Fema ⌿	subsumed	(Fe	
(Fema \	subsumed	(Fe	
(Fema ⍀	subsumed	(Fe	
(Fema Break	Interrupt	empty, top-level	D3
(Fema D	subsumed	(Fe	
(Fema Da	subsumed	(Fe	
(Fema M	subsumed	(Fe	
(Fema Ma	subsumed	(Fe	
(Fema Vi	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Fema Vf	subsumed	(Fe	
(Fema Vo	subsumed	(Fe	
(Fema Vu	subsumed	(Fe	

Table 93. Source Input Enumeration: Function Exprs., (Feo[op]

Sequence	Response	Equivalent	Trace
(Feo[op] E	illegal		
(Feo[op] Ea	subsumed	(Fe	
(Feo[op] Fea	subsumed	(Fe	
(Feo[op] Feaa	subsumed	(Fe	
(Feo[op] Fed	subsumed	(Fe	
(Feo[op] Feda	subsumed	(Fe	
(Feo[op] Fem	subsumed	(Fe	
(Feo[op] Fema	subsumed	(Fe	
(Feo[op] Feo[op]	subsumed	(Fe	
(Feo[op] Fn	subsumed	(Fe	
(Feo[op] Fnm	subsumed	(Fe	
(Feo[op] Fnd	subsumed	(Fe	
(Feo[op] [	subsumed	(Fe	
(Feo[op]]	subsumed	(Fe	
(Feo[op] (	subsumed	(Fe	
(Feo[op])	oper[op]	op	4, D5
(Feo[op] ←	subsumed	(Fe	
(Feo[op] ≃	subsumed	(Fe	
(Feo[op] ∘	subsumed	(Fe	
(Feo[op] ¨	subsumed	(Fe	
(Feo[op] .	subsumed	(Fe	
(Feo[op] ⍣	subsumed	(Fe	
(Feo[op] /	subsumed	(Fe	
(Feo[op] ≠	subsumed	(Fe	
(Feo[op] \	subsumed	(Fe	
(Feo[op] ⍀	subsumed	(Fe	
(Feo[op] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
(Feo[op] D	subsumed	(Fe	
(Feo[op] Da	subsumed	(Fe	
(Feo[op] M	subsumed	(Fe	
(Feo[op] Ma	subsumed	(Fe	
(Feo[op] Vi	subsumed	(Fe	
(Feo[op] Vf	subsumed	(Fe	
(Feo[op] Vo	subsumed	(Fe	
(Feo[op] Vu	subsumed	(Fe	

Table 94. Source Input Enumeration: Function Expressions, (Vf

Sequence	Response	Equivalent	Trace
(Vf E	illegal		
(Vf Ea	subsumed	(Fe	
(Vf Fea	subsumed	(Fe	
(Vf Feaa	subsumed	(Fe	
(Vf Fed	subsumed	(Fe	
(Vf Feda	subsumed	(Fe	
(Vf Fem	subsumed	(Fe	
(Vf Fema	subsumed	(Fe	
(Vf Feo[op]	subsumed	(Fe	
(Vf Fn	subsumed	(Fe	
(Vf Fnm	subsumed	(Fe	
(Vf Fnd	subsumed	(Fe	
(Vf [	subsumed	(Fe	
(Vf]	subsumed	(Fe	
(Vf (	subsumed	(Fe	
(Vf)	ambivalent	Fn	4
(Vf ←	wait	(	4
(Vf ˜	subsumed	(Fe	
(Vf ∘	subsumed	(Fe	
(Vf ¨	subsumed	(Fe	
(Vf .	subsumed	(Fe	
(Vf ⍣	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Vf /	subsumed	(Fe	
(Vf ⁄	subsumed	(Fe	
(Vf \	subsumed	(Fe	
(Vf ⧵	subsumed	(Fe	
(Vf Break	Interrupt	empty, top-level	D3
(Vf D	subsumed	(Fe	
(Vf Da	subsumed	(Fe	
(Vf M	subsumed	(Fe	
(Vf Ma	subsumed	(Fe	
(Vf Vi	subsumed	(Fe	
(Vf Vf	subsumed	(Fe	
(Vf Vo	subsumed	(Fe	
(Vf Vu	subsumed	(Fe	

Table 95. Source Input Enumeration: Function Expressions, (Vo[op]

Sequence	Response	Equivalent	Trace
(Vo[op] E	illegal		
(Vo[op] Ea	subsumed	(Fe	
(Vo[op] Fea	subsumed	(Fe	
(Vo[op] Feaa	subsumed	(Fe	
(Vo[op] Fed	subsumed	(Fe	
(Vo[op] Feda	subsumed	(Fe	
(Vo[op] Fem	subsumed	(Fe	
(Vo[op] Fema	subsumed	(Fe	
(Vo[op] Feo[op]	subsumed	(Fe	
(Vo[op] Fn	subsumed	(Fe	
(Vo[op] Fnm	subsumed	(Fe	
(Vo[op] Fnd	subsumed	(Fe	
(Vo[op] [	subsumed	(Fe	
(Vo[op]]	subsumed	(Fe	
(Vo[op] (	subsumed	(Fe	
(Vo[op])	oper[op]	op	4, D5
(Vo[op] ←	wait	(	4

Sequence	Response	Equivalent	Trace
(Vo[op] ¨̃	subsumed	(Fe	
(Vo[op] ∘	subsumed	(Fe	
(Vo[op] ¨	subsumed	(Fe	
(Vo[op] .	subsumed	(Fe	
(Vo[op] ¨*	subsumed	(Fe	
(Vo[op] /	subsumed	(Fe	
(Vo[op] ≠	subsumed	(Fe	
(Vo[op] \	subsumed	(Fe	
(Vo[op] ↚	subsumed	(Fe	
(Vo[op] Break	Interrupt	empty, top-level	D3
(Vo[op] D	subsumed	(Fe	
(Vo[op] Da	subsumed	(Fe	
(Vo[op] M	subsumed	(Fe	
(Vo[op] Ma	subsumed	(Fe	
(Vo[op] Vi	subsumed	(Fe	
(Vo[op] Vf	subsumed	(Fe	
(Vo[op] Vo	subsumed	(Fe	
(Vo[op] Vu	subsumed	(Fe	

Table 96. Source Input Enumeration: Function Expressions, (Vu

Sequence	Response	Equivalent	Trace
(Vu E	illegal		
(Vu Ea	subsumed	(Fe	
(Vu Fea	subsumed	(Fe	
(Vu Feaa	subsumed	(Fe	
(Vu Fed	subsumed	(Fe	
(Vu Feda	subsumed	(Fe	
(Vu Fem	subsumed	(Fe	
(Vu Fema	subsumed	(Fe	
(Vu Feo[op]	subsumed	(Fe	
(Vu Fn	subsumed	(Fe	
(Vu Fnm	subsumed	(Fe	
(Vu Fnd	subsumed	(Fe	

Sequence	Response	Equivalent	Trace
(Vu [	subsumed	(Fe	
(Vu]	subsumed	(Fe	
(Vu (	subsumed	(Fe	
(Vu)	Value Error	empty	4, 10
(Vu ←	wait	(	4
(Vu ˜	subsumed	(Fe	
(Vu ∘	subsumed	(Fe	
(Vu ¨	subsumed	(Fe	
(Vu .	subsumed	(Fe	
(Vu ⍟	subsumed	(Fe	
(Vu /	subsumed	(Fe	
(Vu ⌿	subsumed	(Fe	
(Vu \	subsumed	(Fe	
(Vu ⍀	subsumed	(Fe	
(Vu Break	Interrupt	empty, top-level	D3
(Vu D	subsumed	(Fe	
(Vu Da	subsumed	(Fe	
(Vu M	subsumed	(Fe	
(Vu Ma	subsumed	(Fe	
(Vu Vi	subsumed	(Fe	
(Vu Vf	subsumed	(Fe	
(Vu Vo	subsumed	(Fe	
(Vu Vu	subsumed	(Fe	

Table 97. Source Input Enumeration: Function Expressions, Da [

Sequence	Response	Equivalent	Trace
Da [E	wait		4
Da [Ea	subsumed	Da [E	
Da [Fea	illegal		
Da [Feaa	illegal		
Da [Fed	illegal		
Da [Feda	illegal		
Da [Fem	illegal		

Sequence	Response	Equivalent	Trace
Da [Fema	illegal		
Da [Feo	illegal		
Da [Fn	subsumed	Da [E	
Da [Fnm	subsumed	Da [E	
Da [Fnd	subsumed	Da [E	
Da [[	subsumed	Da [E	
Da [ ]	Syntax Error	empty	4, 10
Da [(	subsumed	Da [E	
Da [ )	subsumed	Da [E	
Da [←	subsumed	Da [E	
Da [¨̃	subsumed	Da [E	
Da [∘	subsumed	Da [E	
Da [¨	subsumed	Da [E	
Da [.	subsumed	Da [E	
Da [¨*	subsumed	Da [E	
Da [/	subsumed	Da [E	
Da [≠	subsumed	Da [E	
Da [\	subsumed	Da [E	
Da [⍀	subsumed	Da [E	
Da [Break	Interrupt	empty, top-level	D3
Da [D	subsumed	Da [E	
Da [Da	subsumed	Da [E	
Da [M	subsumed	Da [E	
Da [Ma	subsumed	Da [E	
Da [Vi	subsumed	Da [E	
Da [Vf	subsumed	Da [E	
Da [Vo	subsumed	Da [E	
Da [Vu	subsumed	Da [E	

Table 98. Source Input Enumeration: Function Expressions, Da (

Sequence	Response	Equivalent	Trace
Da (E	illegal		
Da (Ea	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Da (Fea	Syntax Error	empty	4, 10
Da (Feaa	Syntax Error	empty	4, 10
Da (Fed	Syntax Error	empty	4, 10
Da (Feda	Syntax Error	empty	4, 10
Da (Fem	Syntax Error	empty	4, 10
Da (Fema	Syntax Error	empty	4, 10
Da (Feo[Fnm]	wait	Fn (Feo[Fnm]	4
Da (Feo[Fnd]	wait	Fn (Feo[Fnd]	4
Da (Feo[˜̈]	wait	Fn (Feo[˜̈]	4
Da (Feo[∘]	wait		4
Da (Feo[¨]	wait		4
Da (Feo[.]	wait	Fn (Feo[.]	4
Da (Feo[*̈]	wait		4
Da (Feo[/ ≠]	wait	Fn (Feo[/ ≠]	4
Da (Feo[\ ↚]	wait	Fn (Feo[\ ↚]	4
Da (Fn	subsumed	Da (Fe	
Da (Fnm	subsumed	Da (Fe	
Da (Fnd	subsumed	Da (Fe	
Da ([	subsumed	Da (Fe	
Da ( ]	subsumed	Da (Fe	
Da ((	subsumed	Da (Fe	
Da ( )	Syntax Error	empty	4, 10
Da (←	subsumed	Da (Fe	
Da (˜̈	subsumed	Da (Fe	
Da (∘	subsumed	Da (Fe	
Da (¨	subsumed	Da (Fe	
Da (.	subsumed	Da (Fe	
Da (*̈	subsumed	Da (Fe	
Da (/	subsumed	Da (Fe	
Da (≠	subsumed	Da (Fe	
Da (\	subsumed	Da (Fe	
Da (↚	subsumed	Da (Fe	
Da (Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Da (D	subsumed	Da (Fe	
Da (Da	subsumed	Da (Fe	
Da (M	subsumed	Da (Fe	
Da (Ma	subsumed	Da (Fe	
Da (Vi	subsumed	Da (Fe	
Da (Vf	wait		4
Da (Vo[Fnm]	wait		4
Da (Vo[Fnd]	wait		4
Da (Vo[¨~]	wait		4, D5
Da (Vo[∘]	wait		4, D5
Da (Vo[¨]	wait		4, D5
Da (Vo[.]	wait		4, D5
Da (Vo[¨*]	wait		4, D5
Da (Vo[/ ≠]	wait		4, D5
Da (Vo[\ ≠]	wait		4, D5
Da (Vu	wait		4

Table 99. Source Input Enumeration: Function Expressions, Da ∘

Sequence	Response	Equivalent	Trace
Da ∘ E	illegal		
Da ∘ Ea	monadic	Fn ∘ Ea	4
Da ∘ Fea	illegal		
Da ∘ Feaa	illegal		
Da ∘ Fed	illegal		
Da ∘ Feda	illegal		
Da ∘ Fem	illegal		
Da ∘ Fema	illegal		
Da ∘ Feo	illegal		
Da ∘ Fn	dyadic	Fn ∘ Fn	4
Da ∘ Fnm	Syntax Error	empty	4, 10
Da ∘ Fnd	Syntax Error	empty	4, 10
Da ∘ [	Syntax Error	empty	4, 10
Da ∘]	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Da ∘ (	wait		4
Da ∘)	Syntax Error	empty	4, 10
Da ∘ ←	Syntax Error	empty	4, 10
Da ∘ ⍨	Syntax Error	empty	4, 10
Da ∘ ∘	Syntax Error	empty	4, 10
Da ∘ ¨	Syntax Error	empty	4, 10
Da ∘ .	Syntax Error	empty	4, 10
Da ∘ ⍣	Syntax Error	empty	4, 10
Da ∘ /	Syntax Error	empty	4, 10
Da ∘ ⌿	Syntax Error	empty	4, 10
Da ∘ \	Syntax Error	empty	4, 10
Da ∘ ⍀	Syntax Error	empty	4, 10
Da ∘ Break	Interrupt	empty, top-level	D3
Da ∘ D	Syntax Error	empty	4, 10
Da ∘ Da	Syntax Error	empty	4, 10
Da ∘ M	dyadic	Fn ∘ Fn	4
Da ∘ Ma	dyadic	Fn ∘ Fn	4
Da ∘ Vi	Value Error	empty	4, 10
Da ∘ Vf	dyadic	Fn ∘ Fn	4
Da ∘ Vo	Syntax Error	empty	4, 10
Da ∘ Vu	Value Error	empty	4, 10

Table 100. Source Input Enumeration: Function Expressions, Da ⍣

Sequence	Response	Equivalent	Trace
Da ⍣ E	illegal		
Da ⍣ Ea	dyadic	Fn ⍣ Ea	4
Da ⍣ Fea	illegal		
Da ⍣ Feaa	illegal		
Da ⍣ Fed	illegal		
Da ⍣ Feda	illegal		
Da ⍣ Fem	illegal		
Da ⍣ Fema	illegal		
Da ⍣ Feo	illegal		

Sequence	Response	Equivalent	Trace
Da ⍣ Fn	dyadic	Fn ⍣ Fn	4
Da ⍣ Fnm	Syntax Error	empty	4, 10
Da ⍣ Fnd	Syntax Error	empty	4, 10
Da ⍣ [	Syntax Error	empty	4, 10
Da ⍣]	Syntax Error	empty	4, 10
Da ⍣ (	wait		4
Da ⍣)	Syntax Error	empty	4, 10
Da ⍣ ←	Syntax Error	empty	4, 10
Da ⍣ ⍨	Syntax Error	empty	4, 10
Da ⍣ ∘	Syntax Error	empty	4, 10
Da ⍣ ¨	Syntax Error	empty	4, 10
Da ⍣ .	Syntax Error	empty	4, 10
Da ⍣ ⍣	Syntax Error	empty	4, 10
Da ⍣ /	dyadic	Fn ⍣ Fn	4
Da ⍣ ⌿	dyadic	Fn ⍣ Fn	4
Da ⍣ \	dyadic	Fn ⍣ Fn	4
Da ⍣ ⍀	dyadic	Fn ⍣ Fn	4
Da ⍣ Break	Interrupt	empty, top-level	D3
Da ⍣ D	dyadic	Fn ⍣ Fn	4
Da ⍣ Da	dyadic	Fn ⍣ Fn	4
Da ⍣ M	dyadic	Fn ⍣ Fn	4
Da ⍣ Ma	dyadic	Fn ⍣ Fn	4
Da ⍣ Vi	Value Error	empty	4, 10
Da ⍣ Vf	dyadic	Fn ⍣ Fn	4
Da ⍣ Vo	Syntax Error	empty	4, 10
Da ⍣ Vu	Value Error	empty	4, 10

Table 101. Source Input Enumeration: Function Expressions, Ea Fnd (

Sequence	Response	Equivalent	Trace
Ea Fnd (E	illegal		
Ea Fnd (Ea	Syntax Error	empty	4, 10
Ea Fnd (Fea	wait		4
Ea Fnd (Feaa	wait	Ea Fnd (Fea	4

Sequence	Response	Equivalent	Trace
Ea Fnd (Fed	wait	Ea Fnd (Fea	4
Ea Fnd (Feda	wait	Ea Fnd (Fea	4
Ea Fnd (Fem	wait	Ea Fnd (Fea	4
Ea Fnd (Fema	wait	Ea Fnd (Fea	4
Ea Fnd (Feo	Syntax Error	empty	4, 10
Ea Fnd (Fn	subsumed	Ea Fnd (Fe	
Ea Fnd (Fnm	subsumed	Ea Fnd (Fe	
Ea Fnd (Fnd	subsumed	Ea Fnd (Fe	
Ea Fnd ([	subsumed	Ea Fnd (Fe	
Ea Fnd ( ]	subsumed	Ea Fnd (Fe	
Ea Fnd ((	subsumed	Ea Fnd (Fe	
Ea Fnd ( )	Syntax Error	empty	4, 10
Ea Fnd (←	subsumed	Ea Fnd (Fe	
Ea Fnd (⁖	subsumed	Ea Fnd (Fe	
Ea Fnd (∘	subsumed	Ea Fnd (Fe	
Ea Fnd (¨	subsumed	Ea Fnd (Fe	
Ea Fnd (.	subsumed	Ea Fnd (Fe	
Ea Fnd (⁘	subsumed	Ea Fnd (Fe	
Ea Fnd (/	subsumed	Ea Fnd (Fe	
Ea Fnd (⁄	subsumed	Ea Fnd (Fe	
Ea Fnd (\	subsumed	Ea Fnd (Fe	
Ea Fnd (⍀	subsumed	Ea Fnd (Fe	
Ea Fnd (Break	Interrupt	empty, top-level	D3
Ea Fnd (D	subsumed	Ea Fnd (Fe	
Ea Fnd (Da	subsumed	Ea Fnd (Fe	
Ea Fnd (M	subsumed	Ea Fnd (Fe	
Ea Fnd (Ma	subsumed	Ea Fnd (Fe	
Ea Fnd (Vi	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf	wait		4
Ea Fnd (Vo	wait		4
Ea Fnd (Vu	wait		4

Table 102. Source Input Enumeration: Func. Expr., Ea (Feo[Fnm]

Sequence	Response	Equivalent	Trace
Ea (Feo[Fnm] E	illegal		
Ea (Feo[Fnm] Ea	illegal		
Ea (Feo[Fnm] Fea	illegal		
Ea (Feo[Fnm] Feaa	illegal		
Ea (Feo[Fnm] Fed	illegal		
Ea (Feo[Fnm] Feda	illegal		
Ea (Feo[Fnm] Fem	illegal		
Ea (Feo[Fnm] Fema	illegal		
Ea (Feo[Fnm] Feo	illegal		
Ea (Feo[Fnm] Fn	subsumed	Ea (Feo	
Ea (Feo[Fnm] Fnm	subsumed	Ea (Feo	
Ea (Feo[Fnm] Fnd	subsumed	Ea (Feo	
Ea (Feo[Fnm] [	subsumed	Ea (Feo	
Ea (Feo[Fnm]]	subsumed	Ea (Feo	
Ea (Feo[Fnm] (	subsumed	Ea (Feo	
Ea (Feo[Fnm])	ambivalent	Ea Fnm	4
Ea (Feo[Fnm] ←	subsumed	Ea (Feo	
Ea (Feo[Fnm] ⁖	subsumed	Ea (Feo	
Ea (Feo[Fnm] ∘	subsumed	Ea (Feo	
Ea (Feo[Fnm] ¨	subsumed	Ea (Feo	
Ea (Feo[Fnm] .	subsumed	Ea (Feo	
Ea (Feo[Fnm] ⁑	subsumed	Ea (Feo	
Ea (Feo[Fnm] /	subsumed	Ea (Feo	
Ea (Feo[Fnm] ⁄	subsumed	Ea (Feo	
Ea (Feo[Fnm] \	subsumed	Ea (Feo	
Ea (Feo[Fnm] ⅄	subsumed	Ea (Feo	
Ea (Feo[Fnm] Break	Interrupt	empty, top-level	D3
Ea (Feo[Fnm] D	subsumed	Ea (Feo	
Ea (Feo[Fnm] Da	subsumed	Ea (Feo	
Ea (Feo[Fnm] M	subsumed	Ea (Feo	
Ea (Feo[Fnm] Ma	subsumed	Ea (Feo	
Ea (Feo[Fnm] Vi	subsumed	Ea (Feo	

Sequence	Response	Equivalent	Trace
Ea (Feo[Fnm] Vf	subsumed	Ea (Feo	
Ea (Feo[Fnm] Vo	subsumed	Ea (Feo	
Ea (Feo[Fnm] Vu	subsumed	Ea (Feo	

Table 103. Source Input Enumeration: Func. Expr., Ea (Feo[Fnd]

Sequence	Response	Equivalent	Trace
Ea (Feo[Fnd] E	illegal		
Ea (Feo[Fnd] Ea	illegal		
Ea (Feo[Fnd] Fea	illegal		
Ea (Feo[Fnd] Feaa	illegal		
Ea (Feo[Fnd] Fed	illegal		
Ea (Feo[Fnd] Feda	illegal		
Ea (Feo[Fnd] Fem	illegal		
Ea (Feo[Fnd] Fema	illegal		
Ea (Feo[Fnd] Feo	illegal		
Ea (Feo[Fnd] Fn	subsumed	Ea (Feo	
Ea (Feo[Fnd] Fnm	subsumed	Ea (Feo	
Ea (Feo[Fnd] Fnd	subsumed	Ea (Feo	
Ea (Feo[Fnd] [	subsumed	Ea (Feo	
Ea (Feo[Fnd]]	subsumed	Ea (Feo	
Ea (Feo[Fnd] (	subsumed	Ea (Feo	
Ea (Feo[Fnd])	wait	Ea Fnd	4
Ea (Feo[Fnd] ←	subsumed	Ea (Feo	
Ea (Feo[Fnd] ˘	subsumed	Ea (Feo	
Ea (Feo[Fnd] ∘	subsumed	Ea (Feo	
Ea (Feo[Fnd] ¨	subsumed	Ea (Feo	
Ea (Feo[Fnd] .	subsumed	Ea (Feo	
Ea (Feo[Fnd] ⁎	subsumed	Ea (Feo	
Ea (Feo[Fnd] /	subsumed	Ea (Feo	
Ea (Feo[Fnd] ⁄	subsumed	Ea (Feo	
Ea (Feo[Fnd] \	subsumed	Ea (Feo	
Ea (Feo[Fnd] ∖	subsumed	Ea (Feo	
Ea (Feo[Fnd] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Ea (Feo[Fnd] D	subsumed	Ea (Feo	
Ea (Feo[Fnd] Da	subsumed	Ea (Feo	
Ea (Feo[Fnd] M	subsumed	Ea (Feo	
Ea (Feo[Fnd] Ma	subsumed	Ea (Feo	
Ea (Feo[Fnd] Vi	subsumed	Ea (Feo	
Ea (Feo[Fnd] Vf	subsumed	Ea (Feo	
Ea (Feo[Fnd] Vo	subsumed	Ea (Feo	
Ea (Feo[Fnd] Vu	subsumed	Ea (Feo	

Table 104. Source Input Enumeration: Func. Expr., Ea (Feo[∘]

Sequence	Response	Equivalent	Trace
Ea (Feo[∘] E	illegal		
Ea (Feo[∘] Ea	illegal		
Ea (Feo[∘] Fea	illegal		
Ea (Feo[∘] Feaa	illegal		
Ea (Feo[∘] Fed	illegal		
Ea (Feo[∘] Feda	illegal		
Ea (Feo[∘] Fem	illegal		
Ea (Feo[∘] Fema	illegal		
Ea (Feo[∘] Feo	illegal		
Ea (Feo[∘] Fn	subsumed	Ea (Feo	
Ea (Feo[∘] Fnm	subsumed	Ea (Feo	
Ea (Feo[∘] Fnd	subsumed	Ea (Feo	
Ea (Feo[∘] [	subsumed	Ea (Feo	
Ea (Feo[∘]]	subsumed	Ea (Feo	
Ea (Feo[∘] (	subsumed	Ea (Feo	
Ea (Feo[∘])	wait	Ea ∘	4
Ea (Feo[∘] ←	subsumed	Ea (Feo	
Ea (Feo[∘] ⍨	subsumed	Ea (Feo	
Ea (Feo[∘] ∘	subsumed	Ea (Feo	
Ea (Feo[∘] ¨	subsumed	Ea (Feo	
Ea (Feo[∘] .	subsumed	Ea (Feo	
Ea (Feo[∘] ⍣	subsumed	Ea (Feo	

Sequence	Response	Equivalent	Trace
Ea (Feo[∘] /	subsumed	Ea (Feo	
Ea (Feo[∘] ⁄	subsumed	Ea (Feo	
Ea (Feo[∘] \	subsumed	Ea (Feo	
Ea (Feo[∘] ∖	subsumed	Ea (Feo	
Ea (Feo[∘] Break	Interrupt	empty, top-level	D3
Ea (Feo[∘] D	subsumed	Ea (Feo	
Ea (Feo[∘] Da	subsumed	Ea (Feo	
Ea (Feo[∘] M	subsumed	Ea (Feo	
Ea (Feo[∘] Ma	subsumed	Ea (Feo	
Ea (Feo[∘] Vi	subsumed	Ea (Feo	
Ea (Feo[∘] Vf	subsumed	Ea (Feo	
Ea (Feo[∘] Vo	subsumed	Ea (Feo	
Ea (Feo[∘] Vu	subsumed	Ea (Feo	

Table 105. Source Input Enumeration: Function Expressions, Ea (Vf

Sequence	Response	Equivalent	Trace
Ea (Vf E	illegal		
Ea (Vf Ea	Syntax Error	empty	4, 10
Ea (Vf Fea	illegal		
Ea (Vf Feaa	illegal		
Ea (Vf Fed	illegal		
Ea (Vf Feda	illegal		
Ea (Vf Fem	illegal		
Ea (Vf Fema	illegal		
Ea (Vf Feo	illegal		
Ea (Vf Fn	subsumed	Ea (Fe	
Ea (Vf Fnm	subsumed	Ea (Fe	
Ea (Vf Fnd	subsumed	Ea (Fe	
Ea (Vf [	subsumed	Ea (Fe	
Ea (Vf]	subsumed	Ea (Fe	
Ea (Vf (	subsumed	Ea (Fe	
Ea (Vf)	Syntax Error	empty	4, 10
Ea (Vf ←	wait	Ea (	4

Sequence	Response	Equivalent	Trace
Ea (Vf ⁐	subsumed	Ea (Fe	
Ea (Vf ∘	subsumed	Ea (Fe	
Ea (Vf ⁑	subsumed	Ea (Fe	
Ea (Vf .	subsumed	Ea (Fe	
Ea (Vf ⁕	subsumed	Ea (Fe	
Ea (Vf /	subsumed	Ea (Fe	
Ea (Vf ⁄	subsumed	Ea (Fe	
Ea (Vf \	subsumed	Ea (Fe	
Ea (Vf ⅋	subsumed	Ea (Fe	
Ea (Vf Break	Interrupt	empty, top-level	D3
Ea (Vf D	subsumed	Ea (Fe	
Ea (Vf Da	subsumed	Ea (Fe	
Ea (Vf M	subsumed	Ea (Fe	
Ea (Vf Ma	subsumed	Ea (Fe	
Ea (Vf Vi	subsumed	Ea (Fe	
Ea (Vf Vf	subsumed	Ea (Fe	
Ea (Vf Vo	subsumed	Ea (Fe	
Ea (Vf Vu	subsumed	Ea (Fe	

Table 106. Source Input Enumeration: Func. Expr., Ea (Vo[Fnm]

Sequence	Response	Equivalent	Trace
Ea (Vo[Fnm] E	illegal		
Ea (Vo[Fnm] Ea	illegal		
Ea (Vo[Fnm] Fea	illegal		
Ea (Vo[Fnm] Feaa	illegal		
Ea (Vo[Fnm] Fed	illegal		
Ea (Vo[Fnm] Feda	illegal		
Ea (Vo[Fnm] Fem	illegal		
Ea (Vo[Fnm] Fema	illegal		
Ea (Vo[Fnm] Feo	illegal		
Ea (Vo[Fnm] Fn	subsumed	Ea (Feo	
Ea (Vo[Fnm] Fnm	subsumed	Ea (Feo	
Ea (Vo[Fnm] Fnd	subsumed	Ea (Feo	

Sequence	Response	Equivalent	Trace
Ea (Vo[Fnm] [	subsumed	Ea (Feo	
Ea (Vo[Fnm]]	subsumed	Ea (Feo	
Ea (Vo[Fnm] (	subsumed	Ea (Feo	
Ea (Vo[Fnm])	ambivalent	Ea Fnm	4
Ea (Vo[Fnm] ←	wait	Ea (	4
Ea (Vo[Fnm] ⁖	subsumed	Ea (Feo	
Ea (Vo[Fnm] ∘	subsumed	Ea (Feo	
Ea (Vo[Fnm] ¨	subsumed	Ea (Feo	
Ea (Vo[Fnm] .	subsumed	Ea (Feo	
Ea (Vo[Fnm] ⁑	subsumed	Ea (Feo	
Ea (Vo[Fnm] /	subsumed	Ea (Feo	
Ea (Vo[Fnm] ≠	subsumed	Ea (Feo	
Ea (Vo[Fnm] \	subsumed	Ea (Feo	
Ea (Vo[Fnm] ↚	subsumed	Ea (Feo	
Ea (Vo[Fnm] Break	Interrupt	empty, top-level	D3
Ea (Vo[Fnm] D	subsumed	Ea (Feo	
Ea (Vo[Fnm] Da	subsumed	Ea (Feo	
Ea (Vo[Fnm] M	subsumed	Ea (Feo	
Ea (Vo[Fnm] Ma	subsumed	Ea (Feo	
Ea (Vo[Fnm] Vi	subsumed	Ea (Feo	
Ea (Vo[Fnm] Vf	subsumed	Ea (Feo	
Ea (Vo[Fnm] Vo	subsumed	Ea (Feo	
Ea (Vo[Fnm] Vu	subsumed	Ea (Feo	

Table 107. Source Input Enumeration: Func. Expr., Ea (Vo[Fnd]

Sequence	Response	Equivalent	Trace
Ea (Vo[Fnd] E	illegal		
Ea (Vo[Fnd] Ea	illegal		
Ea (Vo[Fnd] Fea	illegal		
Ea (Vo[Fnd] Feaa	illegal		
Ea (Vo[Fnd] Fed	illegal		
Ea (Vo[Fnd] Feda	illegal		
Ea (Vo[Fnd] Fem	illegal		

Sequence	Response	Equivalent	Trace
Ea (Vo[Fnd] Fema	illegal		
Ea (Vo[Fnd] Feo	illegal		
Ea (Vo[Fnd] Fn	subsumed	Ea (Feo	
Ea (Vo[Fnd] Fnm	subsumed	Ea (Feo	
Ea (Vo[Fnd] Fnd	subsumed	Ea (Feo	
Ea (Vo[Fnd] [	subsumed	Ea (Feo	
Ea (Vo[Fnd]]	subsumed	Ea (Feo	
Ea (Vo[Fnd] (	subsumed	Ea (Feo	
Ea (Vo[Fnd])	wait	Ea Fnd	4
Ea (Vo[Fnd] ←	wait	Ea (	4
Ea (Vo[Fnd] ˜	subsumed	Ea (Feo	
Ea (Vo[Fnd] ∘	subsumed	Ea (Feo	
Ea (Vo[Fnd] ¨	subsumed	Ea (Feo	
Ea (Vo[Fnd] .	subsumed	Ea (Feo	
Ea (Vo[Fnd] ⁑	subsumed	Ea (Feo	
Ea (Vo[Fnd] /	subsumed	Ea (Feo	
Ea (Vo[Fnd] ≠	subsumed	Ea (Feo	
Ea (Vo[Fnd] \	subsumed	Ea (Feo	
Ea (Vo[Fnd] ⍀	subsumed	Ea (Feo	
Ea (Vo[Fnd] Break	Interrupt	empty, top-level	D3
Ea (Vo[Fnd] D	subsumed	Ea (Feo	
Ea (Vo[Fnd] Da	subsumed	Ea (Feo	
Ea (Vo[Fnd] M	subsumed	Ea (Feo	
Ea (Vo[Fnd] Ma	subsumed	Ea (Feo	
Ea (Vo[Fnd] Vi	subsumed	Ea (Feo	
Ea (Vo[Fnd] Vf	subsumed	Ea (Feo	
Ea (Vo[Fnd] Vo	subsumed	Ea (Feo	
Ea (Vo[Fnd] Vu	subsumed	Ea (Feo	

Table 108. Source Input Enumeration: Func. Expr., Ea (Vo[∘]

Sequence	Response	Equivalent	Trace
Ea (Vo[∘] E	illegal		
Ea (Vo[∘] Ea	illegal		

Sequence	Response	Equivalent	Trace
Ea (Vo[∘] Fea	illegal		
Ea (Vo[∘] Feaa	illegal		
Ea (Vo[∘] Fed	illegal		
Ea (Vo[∘] Feda	illegal		
Ea (Vo[∘] Fem	illegal		
Ea (Vo[∘] Fema	illegal		
Ea (Vo[∘] Feo	illegal		
Ea (Vo[∘] Fn	subsumed	Ea (Feo	
Ea (Vo[∘] Fnm	subsumed	Ea (Feo	
Ea (Vo[∘] Fnd	subsumed	Ea (Feo	
Ea (Vo[∘] [	subsumed	Ea (Feo	
Ea (Vo[∘]]	subsumed	Ea (Feo	
Ea (Vo[∘] (	subsumed	Ea (Feo	
Ea (Vo[∘])	wait	Ea ∘	4, D5
Ea (Vo[∘] ←	wait	Ea (	4, D5
Ea (Vo[∘] ⁐	subsumed	Ea (Feo	
Ea (Vo[∘] ∘	subsumed	Ea (Feo	
Ea (Vo[∘] ¨	subsumed	Ea (Feo	
Ea (Vo[∘] .	subsumed	Ea (Feo	
Ea (Vo[∘] ⁑	subsumed	Ea (Feo	
Ea (Vo[∘] /	subsumed	Ea (Feo	
Ea (Vo[∘] ≠	subsumed	Ea (Feo	
Ea (Vo[∘] \	subsumed	Ea (Feo	
Ea (Vo[∘] ↚	subsumed	Ea (Feo	
Ea (Vo[∘] Break	Interrupt	empty, top-level	D3
Ea (Vo[∘] D	subsumed	Ea (Feo	
Ea (Vo[∘] Da	subsumed	Ea (Feo	
Ea (Vo[∘] M	subsumed	Ea (Feo	
Ea (Vo[∘] Ma	subsumed	Ea (Feo	
Ea (Vo[∘] Vi	subsumed	Ea (Feo	
Ea (Vo[∘] Vf	subsumed	Ea (Feo	
Ea (Vo[∘] Vo	subsumed	Ea (Feo	
Ea (Vo[∘] Vu	subsumed	Ea (Feo	

Table 109. Source Input Enumeration: Function Expressions, Ea (Vu

Sequence	Response	Equivalent	Trace
Ea (Vu E	illegal		
Ea (Vu Ea	subsumed	Ea (Feo	
Ea (Vu Fea	illegal		
Ea (Vu Feaa	illegal		
Ea (Vu Fed	illegal		
Ea (Vu Feda	illegal		
Ea (Vu Fem	illegal		
Ea (Vu Fema	illegal		
Ea (Vu Feo	illegal		
Ea (Vu Fn	subsumed	Ea (Feo	
Ea (Vu Fnm	subsumed	Ea (Feo	
Ea (Vu Fnd	subsumed	Ea (Feo	
Ea (Vu [	subsumed	Ea (Feo	
Ea (Vu]	subsumed	Ea (Feo	
Ea (Vu (	subsumed	Ea (Feo	
Ea (Vu)	Value Error	empty	4, 10
Ea (Vu ←	wait	Ea (	4
Ea (Vu ⁖	subsumed	Ea (Feo	
Ea (Vu ∘	subsumed	Ea (Feo	
Ea (Vu ¨	subsumed	Ea (Feo	
Ea (Vu .	subsumed	Ea (Feo	
Ea (Vu ⁑	subsumed	Ea (Feo	
Ea (Vu /	subsumed	Ea (Feo	
Ea (Vu ⁄	subsumed	Ea (Feo	
Ea (Vu \	subsumed	Ea (Feo	
Ea (Vu ↾	subsumed	Ea (Feo	
Ea (Vu Break	Interrupt	empty, top-level	D3
Ea (Vu D	subsumed	Ea (Feo	
Ea (Vu Da	subsumed	Ea (Feo	
Ea (Vu M	subsumed	Ea (Feo	
Ea (Vu Ma	subsumed	Ea (Feo	
Ea (Vu Vi	subsumed	Ea (Feo	

Sequence	Response	Equivalent	Trace
Ea (Vu Vf	subsumed	Ea (Feo	
Ea (Vu Vo	subsumed	Ea (Feo	
Ea (Vu Vu	subsumed	Ea (Feo	

Table 110. Source Input Enumeration: Function Expressions, Ea ∘ Fn

Sequence	Response	Equivalent	Trace
Ea ∘ Fn E	illegal		
Ea ∘ Fn Ea	Syntax Error	empty	4, 10
Ea ∘ Fn Fea	illegal		
Ea ∘ Fn Feaa	illegal		
Ea ∘ Fn Fed	illegal		
Ea ∘ Fn Feda	illegal		
Ea ∘ Fn Fem	illegal		
Ea ∘ Fn Fema	illegal		
Ea ∘ Fn Feo	illegal		
Ea ∘ Fn Fn	Syntax Error	empty	4, 10
Ea ∘ Fn Fnm	ambivalent	Fn Fnm	4
Ea ∘ Fn Fnd	wait	Fn Fnd	4
Ea ∘ Fn [	Syntax Error	empty	4, 10
Ea ∘ Fn]	Syntax Error	empty	4, 10
Ea ∘ Fn (	wait	Fn \ (	4
Ea ∘ Fn)	Syntax Error	empty	4, 10
Ea ∘ Fn ←	Syntax Error	empty	4, 10
Ea ∘ Fn ¨̃	Syntax Error	empty	4, 10
Ea ∘ Fn ∘	wait	Fn \ ∘	4
Ea ∘ Fn ¨	monadic	Fn \ ¨	4
Ea ∘ Fn .	wait	Fn \ .	4
Ea ∘ Fn ¨*	wait	Fn \ ¨*	4
Ea ∘ Fn /	dyadic axis	Fn \ /	4
Ea ∘ Fn ≠	dyadic axis	Fn \ /	4
Ea ∘ Fn \	monadic axis	Fn \ \	4
Ea ∘ Fn ⍀	monadic axis	Fn \ \	4
Ea ∘ Fn Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Ea ∘ Fn D	Syntax Error	empty	4, 10
Ea ∘ Fn Da	Syntax Error	empty	4, 10
Ea ∘ Fn M	Syntax Error	empty	4, 10
Ea ∘ Fn Ma	Syntax Error	empty	4, 10
Ea ∘ Fn Vi	Value Error	empty	4, 10
Ea ∘ Fn Vf	Syntax Error	empty	4, 10
Ea ∘ Fn Vo[Fnm]	ambivalent	Fn Fnm	4
Ea ∘ Fn Vo[Fnd]	wait	Fn Fnd	4
Ea ∘ Fn Vo[¨]	monadic	Fn \ ¨	4, D5
Ea ∘ Fn Vo[¨~]	Syntax Error	empty	4, 10
Ea ∘ Fn Vo[∘]	wait	Fn \ ∘	4, D5
Ea ∘ Fn Vo[¨*]	wait	Fn \ ¨*	4, D5
Ea ∘ Fn Vo[/]	dyadic axis	Fn \ /	4, D5
Ea ∘ Fn Vo[⌿]	dyadic axis	Fn \ /	4, D5
Ea ∘ Fn Vo[\]	monadic axis	Fn \ \	4, D5
Ea ∘ Fn Vo[⍀]	monadic axis	Fn \ \	4, D5
Ea ∘ Fn Vo[.]	wait	Fn \ .	4, D5
Ea ∘ Fn Vu	Value Error	empty	4, 10

Table 111. Source Input Enumeration: Function Expressions, Ea ∘ (

Sequence	Response	Equivalent	Trace
Ea ∘ (E	illegal		
Ea ∘ (Ea	Syntax Error	empty	4, 10
Ea ∘ (Fea	wait		4
Ea ∘ (Feaa	wait	Ea ∘ (Fea	4
Ea ∘ (Fed	wait	Ea ∘ (Fea	4
Ea ∘ (Feda	wait	Ea ∘ (Fea	4
Ea ∘ (Fem	Syntax Error	empty	4, 10
Ea ∘ (Fema	Syntax Error	empty	4, 10
Ea ∘ (Feo	Syntax Error	empty	4, 10
Ea ∘ (Fn	subsumed	Ea ∘ (Fe	
Ea ∘ (Fnm	subsumed	Ea ∘ (Fe	
Ea ∘ (Fnd	subsumed	Ea ∘ (Fe	

Sequence	Response	Equivalent	Trace
Ea ∘ ([	subsumed	Ea ∘ (Fe	
Ea ∘ ( ]	subsumed	Ea ∘ (Fe	
Ea ∘ ((	subsumed	Ea ∘ (Fe	
Ea ∘ ( )	Syntax Error	empty	4, 10
Ea ∘ (←	subsumed	Ea ∘ (Fe	
Ea ∘ (⍨	subsumed	Ea ∘ (Fe	
Ea ∘ (∘	subsumed	Ea ∘ (Fe	
Ea ∘ (¨	subsumed	Ea ∘ (Fe	
Ea ∘ (.	subsumed	Ea ∘ (Fe	
Ea ∘ (⍣	subsumed	Ea ∘ (Fe	
Ea ∘ (/	subsumed	Ea ∘ (Fe	
Ea ∘ (⌿	subsumed	Ea ∘ (Fe	
Ea ∘ (\	subsumed	Ea ∘ (Fe	
Ea ∘ (⍀	subsumed	Ea ∘ (Fe	
Ea ∘ (Break	Interrupt	empty, top-level	D3
Ea ∘ (D	subsumed	Ea ∘ (Fe	
Ea ∘ (Da	subsumed	Ea ∘ (Fe	
Ea ∘ (M	subsumed	Ea ∘ (Fe	
Ea ∘ (Ma	subsumed	Ea ∘ (Fe	
Ea ∘ (Vi	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf	wait		4
Ea ∘ (Vo	wait		4
Ea ∘ (Vu	wait		4

Table 112. Source Input Enumeration: Func. Expr., Fn (Feo[Fnm]

Sequence	Response	Equivalent	Trace	
Fn (Feo[Fnm] E	illegal			
Fn (Feo[Fnm] Ea	Syntax Error	empty		4, 10
Fn (Feo[Fnm] Fea	illegal			
Fn (Feo[Fnm] Feaa	illegal			
Fn (Feo[Fnm] Fed	illegal			
Fn (Feo[Fnm] Feda	illegal			
Fn (Feo[Fnm] Fem	illegal			

Sequence	Response	Equivalent	Trace
Fn (Feo[Fnm] Fema	illegal		
Fn (Feo[Fnm] Feo	illegal		
Fn (Feo[Fnm] Fn	subsumed	Fn (Fe	
Fn (Feo[Fnm] Fnm	subsumed	Fn (Fe	
Fn (Feo[Fnm] Fnd	subsumed	Fn (Fe	
Fn (Feo[Fnm] [	subsumed	Fn (Fe	
Fn (Feo[Fnm]]	subsumed	Fn (Fe	
Fn (Feo[Fnm] (	subsumed	Fn (Fe	
Fn (Feo[Fnm])	ambivalent	Da Fnm	4
Fn (Feo[Fnm] ←	subsumed	Fn (Fe	
Fn (Feo[Fnm] ˜	subsumed	Fn (Fe	
Fn (Feo[Fnm] ∘	subsumed	Fn (Fe	
Fn (Feo[Fnm] ¨	subsumed	Fn (Fe	
Fn (Feo[Fnm] .	subsumed	Fn (Fe	
Fn (Feo[Fnm] ⁎	subsumed	Fn (Fe	
Fn (Feo[Fnm] /	subsumed	Fn (Fe	
Fn (Feo[Fnm] ≠	subsumed	Fn (Fe	
Fn (Feo[Fnm] \	subsumed	Fn (Fe	
Fn (Feo[Fnm] ↚	subsumed	Fn (Fe	
Fn (Feo[Fnm] Break	Interrupt	empty, top-level	D3
Fn (Feo[Fnm] D	subsumed	Fn (Fe	
Fn (Feo[Fnm] Da	subsumed	Fn (Fe	
Fn (Feo[Fnm] M	subsumed	Fn (Fe	
Fn (Feo[Fnm] Ma	subsumed	Fn (Fe	
Fn (Feo[Fnm] Vi	subsumed	Fn (Fe	
Fn (Feo[Fnm] Vf	subsumed	Fn (Fe	
Fn (Feo[Fnm] Vo	subsumed	Fn (Fe	
Fn (Feo[Fnm] Vu	subsumed	Fn (Fe	

Table 113. Source Input Enumeration: Func. Exprs., Fn (Feo[Fnd]

Sequence	Response	Equivalent	Trace
Fn (Feo[Fnd] E	illegal		
Fn (Feo[Fnd] Ea	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fn (Feo[Fnd] Fea	illegal		
Fn (Feo[Fnd] Feaa	illegal		
Fn (Feo[Fnd] Fed	illegal		
Fn (Feo[Fnd] Feda	illegal		
Fn (Feo[Fnd] Fem	illegal		
Fn (Feo[Fnd] Fema	illegal		
Fn (Feo[Fnd] Feo	illegal		
Fn (Feo[Fnd] Fn	subsumed	Fn (Fe	
Fn (Feo[Fnd] Fnm	subsumed	Fn (Fe	
Fn (Feo[Fnd] Fnd	subsumed	Fn (Fe	
Fn (Feo[Fnd] [	subsumed	Fn (Fe	
Fn (Feo[Fnd]]	subsumed	Fn (Fe	
Fn (Feo[Fnd] (	subsumed	Fn (Fe	
Fn (Feo[Fnd])	wait	Fn Fnd	4
Fn (Feo[Fnd] ←	subsumed	Fn (Fe	
Fn (Feo[Fnd] ˜	subsumed	Fn (Fe	
Fn (Feo[Fnd] ∘	subsumed	Fn (Fe	
Fn (Feo[Fnd] ¨	subsumed	Fn (Fe	
Fn (Feo[Fnd] .	subsumed	Fn (Fe	
Fn (Feo[Fnd] ⁎	subsumed	Fn (Fe	
Fn (Feo[Fnd] /	subsumed	Fn (Fe	
Fn (Feo[Fnd] ≠	subsumed	Fn (Fe	
Fn (Feo[Fnd] \	subsumed	Fn (Fe	
Fn (Feo[Fnd] ↚	subsumed	Fn (Fe	
Fn (Feo[Fnd] Break	Interrupt	empty, top-level	D3
Fn (Feo[Fnd] D	subsumed	Fn (Fe	
Fn (Feo[Fnd] Da	subsumed	Fn (Fe	
Fn (Feo[Fnd] M	subsumed	Fn (Fe	
Fn (Feo[Fnd] Ma	subsumed	Fn (Fe	
Fn (Feo[Fnd] Vi	subsumed	Fn (Fe	
Fn (Feo[Fnd] Vf	subsumed	Fn (Fe	
Fn (Feo[Fnd] Vo	subsumed	Fn (Fe	
Fn (Feo[Fnd] Vu	subsumed	Fn (Fe	

Table 114. Source Input Enumeration: Func. Exprs., Fn (Feo[¨˜]

Sequence	Response	Equivalent	Trace
Fn (Feo[¨˜] E	illegal		
Fn (Feo[¨˜] Ea	subsumed	Fn (Fe	
Fn (Feo[¨˜] Fea	illegal		
Fn (Feo[¨˜] Feaa	illegal		
Fn (Feo[¨˜] Fed	illegal		
Fn (Feo[¨˜] Feda	illegal		
Fn (Feo[¨˜] Fem	illegal		
Fn (Feo[¨˜] Fema	illegal		
Fn (Feo[¨˜] Feo	illegal		
Fn (Feo[¨˜] Fn	subsumed	Fn (Fe	
Fn (Feo[¨˜] Fnm	subsumed	Fn (Fe	
Fn (Feo[¨˜] Fnd	subsumed	Fn (Fe	
Fn (Feo[¨˜] [	subsumed	Fn (Fe	
Fn (Feo[¨˜]]	subsumed	Fn (Fe	
Fn (Feo[¨˜] (	subsumed	Fn (Fe	
Fn (Feo[¨˜])	ambivalent	Fn ¨˜	4
Fn (Feo[¨˜] ←	subsumed	Fn (Fe	
Fn (Feo[¨˜] ¨˜	subsumed	Fn (Fe	
Fn (Feo[¨˜] ∘	subsumed	Fn (Fe	
Fn (Feo[¨˜] ¨	subsumed	Fn (Fe	
Fn (Feo[¨˜] .	subsumed	Fn (Fe	
Fn (Feo[¨˜] ⁎	subsumed	Fn (Fe	
Fn (Feo[¨˜] /	subsumed	Fn (Fe	
Fn (Feo[¨˜] ≠	subsumed	Fn (Fe	
Fn (Feo[¨˜] \	subsumed	Fn (Fe	
Fn (Feo[¨˜] ↚	subsumed	Fn (Fe	
Fn (Feo[¨˜] Break	Interrupt	empty, top-level	D3
Fn (Feo[¨˜] D	subsumed	Fn (Fe	
Fn (Feo[¨˜] Da	subsumed	Fn (Fe	
Fn (Feo[¨˜] M	subsumed	Fn (Fe	
Fn (Feo[¨˜] Ma	subsumed	Fn (Fe	
Fn (Feo[¨˜] Vi	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Feo[⁖] Vf	subsumed	Fn (Fe	
Fn (Feo[⁖] Vo	subsumed	Fn (Fe	
Fn (Feo[⁖] Vu	subsumed	Fn (Fe	

Table 115. Source Input Enumeration: Func. Exprs., Fn (Feo[∘]

Sequence	Response	Equivalent	Trace
Fn (Feo[∘] E	illegal		
Fn (Feo[∘] Ea	subsumed	Fn (Fe	
Fn (Feo[∘] Fea	illegal		
Fn (Feo[∘] Feaa	illegal		
Fn (Feo[∘] Fed	illegal		
Fn (Feo[∘] Feda	illegal		
Fn (Feo[∘] Fem	illegal		
Fn (Feo[∘] Fema	illegal		
Fn (Feo[∘] Feo	illegal		
Fn (Feo[∘] Fn	subsumed	Fn (Fe	
Fn (Feo[∘] Fnm	subsumed	Fn (Fe	
Fn (Feo[∘] Fnd	subsumed	Fn (Fe	
Fn (Feo[∘] [	subsumed	Fn (Fe	
Fn (Feo[∘]]	subsumed	Fn (Fe	
Fn (Feo[∘] (	subsumed	Fn (Fe	
Fn (Feo[∘])	wait	Fn ∘	4
Fn (Feo[∘] ←	subsumed	Fn (Fe	
Fn (Feo[∘] ⁖	subsumed	Fn (Fe	
Fn (Feo[∘] ∘	subsumed	Fn (Fe	
Fn (Feo[∘] ¨	subsumed	Fn (Fe	
Fn (Feo[∘] .	subsumed	Fn (Fe	
Fn (Feo[∘] ⁑	subsumed	Fn (Fe	
Fn (Feo[∘] /	subsumed	Fn (Fe	
Fn (Feo[∘] ≠	subsumed	Fn (Fe	
Fn (Feo[∘] \	subsumed	Fn (Fe	
Fn (Feo[∘] ↚	subsumed	Fn (Fe	
Fn (Feo[∘] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn (Feo[∘] D	subsumed	Fn (Fe	
Fn (Feo[∘] Da	subsumed	Fn (Fe	
Fn (Feo[∘] M	subsumed	Fn (Fe	
Fn (Feo[∘] Ma	subsumed	Fn (Fe	
Fn (Feo[∘] Vi	subsumed	Fn (Fe	
Fn (Feo[∘] Vf	subsumed	Fn (Fe	
Fn (Feo[∘] Vo	subsumed	Fn (Fe	
Fn (Feo[∘] Vu	subsumed	Fn (Fe	

Table 116. Source Input Enumeration: Func. Exprs., Fn (Feo[¨]

Sequence	Response	Equivalent	Trace
Fn (Feo[¨] E	illegal		
Fn (Feo[¨] Ea	subsumed	Fn (Fe	
Fn (Feo[¨] Fea	illegal		
Fn (Feo[¨] Feaa	illegal		
Fn (Feo[¨] Fed	illegal		
Fn (Feo[¨] Feda	illegal		
Fn (Feo[¨] Fem	illegal		
Fn (Feo[¨] Fema	illegal		
Fn (Feo[¨] Feo	illegal		
Fn (Feo[¨] Fn	subsumed	Fn (Fe	
Fn (Feo[¨] Fnm	subsumed	Fn (Fe	
Fn (Feo[¨] Fnd	subsumed	Fn (Fe	
Fn (Feo[¨] [	subsumed	Fn (Fe	
Fn (Feo[¨]]	subsumed	Fn (Fe	
Fn (Feo[¨] (	subsumed	Fn (Fe	
Fn (Feo[¨])	ambivalent	Fn ¨	4
Fn (Feo[¨] ←	subsumed	Fn (Fe	
Fn (Feo[¨] ˜	subsumed	Fn (Fe	
Fn (Feo[¨] ∘	subsumed	Fn (Fe	
Fn (Feo[¨] ¨	subsumed	Fn (Fe	
Fn (Feo[¨] .	subsumed	Fn (Fe	
Fn (Feo[¨] ⁎	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Feo[¨] /	subsumed	Fn (Fe	
Fn (Feo[¨] ⁄	subsumed	Fn (Fe	
Fn (Feo[¨] \	subsumed	Fn (Fe	
Fn (Feo[¨] ∖	subsumed	Fn (Fe	
Fn (Feo[¨] Break	Interrupt	empty, top-level	D3
Fn (Feo[¨] D	subsumed	Fn (Fe	
Fn (Feo[¨] Da	subsumed	Fn (Fe	
Fn (Feo[¨] M	subsumed	Fn (Fe	
Fn (Feo[¨] Ma	subsumed	Fn (Fe	
Fn (Feo[¨] Vi	subsumed	Fn (Fe	
Fn (Feo[¨] Vf	subsumed	Fn (Fe	
Fn (Feo[¨] Vo	subsumed	Fn (Fe	
Fn (Feo[¨] Vu	subsumed	Fn (Fe	

Table 117. Source Input Enumeration: Func. Exprs., Fn (Feo[.]

Sequence	Response	Equivalent	Trace
Fn (Feo[.] E	illegal		
Fn (Feo[.] Ea	subsumed	Fn (Fe	
Fn (Feo[.] Fea	illegal		
Fn (Feo[.] Feaa	illegal		
Fn (Feo[.] Fed	illegal		
Fn (Feo[.] Feda	illegal		
Fn (Feo[.] Fem	illegal		
Fn (Feo[.] Fema	illegal		
Fn (Feo[.] Feo	illegal		
Fn (Feo[.] Fn	subsumed	Fn (Fe	
Fn (Feo[.] Fnm	subsumed	Fn (Fe	
Fn (Feo[.] Fnd	subsumed	Fn (Fe	
Fn (Feo[.] [	subsumed	Fn (Fe	
Fn (Feo[.]]	subsumed	Fn (Fe	
Fn (Feo[.] (	subsumed	Fn (Fe	
Fn (Feo[.])	wait	Fn .	4
Fn (Feo[.] ←	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Feo[.] ¨̃	subsumed	Fn (Fe	
Fn (Feo[.] ∘	subsumed	Fn (Fe	
Fn (Feo[.] ¨	subsumed	Fn (Fe	
Fn (Feo[.] .	subsumed	Fn (Fe	
Fn (Feo[.] ⁎̈	subsumed	Fn (Fe	
Fn (Feo[.] /	subsumed	Fn (Fe	
Fn (Feo[.] ≠	subsumed	Fn (Fe	
Fn (Feo[.] \	subsumed	Fn (Fe	
Fn (Feo[.] ≁	subsumed	Fn (Fe	
Fn (Feo[.] Break	Interrupt	empty, top-level	D3
Fn (Feo[.] D	subsumed	Fn (Fe	
Fn (Feo[.] Da	subsumed	Fn (Fe	
Fn (Feo[.] M	subsumed	Fn (Fe	
Fn (Feo[.] Ma	subsumed	Fn (Fe	
Fn (Feo[.] Vi	subsumed	Fn (Fe	
Fn (Feo[.] Vf	subsumed	Fn (Fe	
Fn (Feo[.] Vo	subsumed	Fn (Fe	
Fn (Feo[.] Vu	subsumed	Fn (Fe	

Table 118. Source Input Enumeration: Func. Exprs., Fn (Feo[⁎̈]

Sequence	Response	Equivalent	Trace
Fn (Feo[⁎̈] E	illegal		
Fn (Feo[⁎̈] Ea	subsumed	Fn (Fe	
Fn (Feo[⁎̈] Fea	illegal		
Fn (Feo[⁎̈] Feaa	illegal		
Fn (Feo[⁎̈] Fed	illegal		
Fn (Feo[⁎̈] Feda	illegal		
Fn (Feo[⁎̈] Fem	illegal		
Fn (Feo[⁎̈] Fema	illegal		
Fn (Feo[⁎̈] Feo	illegal		
Fn (Feo[⁎̈] Fn	subsumed	Fn (Fe	
Fn (Feo[⁎̈] Fnm	subsumed	Fn (Fe	
Fn (Feo[⁎̈] Fnd	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Feo[⁑] [	subsumed	Fn (Fe	
Fn (Feo[⁑]]	subsumed	Fn (Fe	
Fn (Feo[⁑] (	subsumed	Fn (Fe	
Fn (Feo[⁑])	wait	Fn ⁑	4
Fn (Feo[⁑] ←	subsumed	Fn (Fe	
Fn (Feo[⁑] ⁓	subsumed	Fn (Fe	
Fn (Feo[⁑] ∘	subsumed	Fn (Fe	
Fn (Feo[⁑] ¨	subsumed	Fn (Fe	
Fn (Feo[⁑] .	subsumed	Fn (Fe	
Fn (Feo[⁑] ⁑	subsumed	Fn (Fe	
Fn (Feo[⁑] /	subsumed	Fn (Fe	
Fn (Feo[⁑] ≠	subsumed	Fn (Fe	
Fn (Feo[⁑] \	subsumed	Fn (Fe	
Fn (Feo[⁑] ↚	subsumed	Fn (Fe	
Fn (Feo[⁑] Break	Interrupt	empty, top-level	D3
Fn (Feo[⁑] D	subsumed	Fn (Fe	
Fn (Feo[⁑] Da	subsumed	Fn (Fe	
Fn (Feo[⁑] M	subsumed	Fn (Fe	
Fn (Feo[⁑] Ma	subsumed	Fn (Fe	
Fn (Feo[⁑] Vi	subsumed	Fn (Fe	
Fn (Feo[⁑] Vf	subsumed	Fn (Fe	
Fn (Feo[⁑] Vo	subsumed	Fn (Fe	
Fn (Feo[⁑] Vu	subsumed	Fn (Fe	

Table 119. Source Input Enumeration: Func. Exprs., Fn (Feo[/ ≠]

Sequence	Response	Equivalent	Trace
Fn (Feo[/ ≠] E	illegal		
Fn (Feo[/ ≠] Ea	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Fea	illegal		
Fn (Feo[/ ≠] Feaa	illegal		
Fn (Feo[/ ≠] Fed	illegal		
Fn (Feo[/ ≠] Feda	illegal		
Fn (Feo[/ ≠] Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn (Feo[/ ≠] Fema	illegal		
Fn (Feo[/ ≠] Feo	illegal		
Fn (Feo[/ ≠] Fn	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Fnm	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Fnd	subsumed	Fn (Fe	
Fn (Feo[/ ≠] [	subsumed	Fn (Fe	
Fn (Feo[/ ≠]]	subsumed	Fn (Fe	
Fn (Feo[/ ≠] (	subsumed	Fn (Fe	
Fn (Feo[/ ≠])	ambivalent axis	Fn /	4
Fn (Feo[/ ≠] ←	subsumed	Fn (Fe	
Fn (Feo[/ ≠] ⁖	subsumed	Fn (Fe	
Fn (Feo[/ ≠] ∘	subsumed	Fn (Fe	
Fn (Feo[/ ≠] ¨	subsumed	Fn (Fe	
Fn (Feo[/ ≠] .	subsumed	Fn (Fe	
Fn (Feo[/ ≠] ⁑	subsumed	Fn (Fe	
Fn (Feo[/ ≠] /	subsumed	Fn (Fe	
Fn (Feo[/ ≠] ≠	subsumed	Fn (Fe	
Fn (Feo[/ ≠] \	subsumed	Fn (Fe	
Fn (Feo[/ ≠] ⍀	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Break	Interrupt	empty, top-level	D3
Fn (Feo[/ ≠] D	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Da	subsumed	Fn (Fe	
Fn (Feo[/ ≠] M	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Ma	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Vi	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Vf	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Vo	subsumed	Fn (Fe	
Fn (Feo[/ ≠] Vu	subsumed	Fn (Fe	

Table 120. Source Input Enumeration: Func. Exprs., Fn (Feo[\ ⍀]

Sequence	Response	Equivalent	Trace
Fn (Feo[\ ⍀] E	illegal		
Fn (Feo[\ ⍀] Ea	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Feo[\ ⍀] Fea	illegal		
Fn (Feo[\ ⍀] Feaa	illegal		
Fn (Feo[\ ⍀] Fed	illegal		
Fn (Feo[\ ⍀] Feda	illegal		
Fn (Feo[\ ⍀] Fem	illegal		
Fn (Feo[\ ⍀] Fema	illegal		
Fn (Feo[\ ⍀] Feo	illegal		
Fn (Feo[\ ⍀] Fn	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Fnm	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Fnd	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] [	subsumed	Fn (Fe	
Fn (Feo[\ ⍀]]	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] (	subsumed	Fn (Fe	
Fn (Feo[\ ⍀])	monadic axis	Fn \	4
Fn (Feo[\ ⍀] ←	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] ⍨	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] ∘	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] ¨	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] .	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] ⍣	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] /	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] ⌿	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] \	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] ⍀	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Break	Interrupt	empty, top-level	D3
Fn (Feo[\ ⍀] D	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Da	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] M	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Ma	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Vi	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Vf	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Vo	subsumed	Fn (Fe	
Fn (Feo[\ ⍀] Vu	subsumed	Fn (Fe	

Table 121. Source Input Enumeration: Function Expressions, Fn (Vf

Sequence	Response	Equivalent	Trace
Fn (Vf E	illegal		
Fn (Vf Ea	subsumed	Fn (Fe	
Fn (Vf Fea	illegal		
Fn (Vf Feaa	illegal		
Fn (Vf Fed	illegal		
Fn (Vf Feda	illegal		
Fn (Vf Fem	illegal		
Fn (Vf Fema	illegal		
Fn (Vf Feo	illegal		
Fn (Vf Fn	subsumed	Fn (Fe	
Fn (Vf Fnm	subsumed	Fn (Fe	
Fn (Vf Fnd	subsumed	Fn (Fe	
Fn (Vf [	subsumed	Fn (Fe	
Fn (Vf]	subsumed	Fn (Fe	
Fn (Vf (	subsumed	Fn (Fe	
Fn (Vf)	Syntax Error	empty	4, 10
Fn (Vf ←	wait	Fn (	4
Fn (Vf ⁖	subsumed	Fn (Fe	
Fn (Vf ∘	subsumed	Fn (Fe	
Fn (Vf ¨	subsumed	Fn (Fe	
Fn (Vf .	subsumed	Fn (Fe	
Fn (Vf ⍣	subsumed	Fn (Fe	
Fn (Vf /	subsumed	Fn (Fe	
Fn (Vf ⌿	subsumed	Fn (Fe	
Fn (Vf \	subsumed	Fn (Fe	
Fn (Vf ⍀	subsumed	Fn (Fe	
Fn (Vf Break	Interrupt	empty, top-level	D3
Fn (Vf D	subsumed	Fn (Fe	
Fn (Vf Da	subsumed	Fn (Fe	
Fn (Vf M	subsumed	Fn (Fe	
Fn (Vf Ma	subsumed	Fn (Fe	
Fn (Vf Vi	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Vf Vf	subsumed	Fn (Fe	
Fn (Vf Vo	subsumed	Fn (Fe	
Fn (Vf Vu	subsumed	Fn (Fe	

Table 122. Source Input Enumeration: Func. Exprs., Fn (Vo[Fnm]

Sequence	Response	Equivalent	Trace
Fn (Vo[Fnm] E	illegal		
Fn (Vo[Fnm] Ea	subsumed	Fn (Fe	
Fn (Vo[Fnm] Fea	illegal		
Fn (Vo[Fnm] Feaa	illegal		
Fn (Vo[Fnm] Fed	illegal		
Fn (Vo[Fnm] Feda	illegal		
Fn (Vo[Fnm] Fem	illegal		
Fn (Vo[Fnm] Fema	illegal		
Fn (Vo[Fnm] Feo	illegal		
Fn (Vo[Fnm] Fn	subsumed	Fn (Fe	
Fn (Vo[Fnm] Fnm	subsumed	Fn (Fe	
Fn (Vo[Fnm] Fnd	subsumed	Fn (Fe	
Fn (Vo[Fnm] [	subsumed	Fn (Fe	
Fn (Vo[Fnm]]	subsumed	Fn (Fe	
Fn (Vo[Fnm] (	subsumed	Fn (Fe	
Fn (Vo[Fnm])	ambivalent	Fn Fnm	4
Fn (Vo[Fnm] ←	wait	Fn (	4
Fn (Vo[Fnm] ¨	subsumed	Fn (Fe	
Fn (Vo[Fnm] ∘	subsumed	Fn (Fe	
Fn (Vo[Fnm] ¨	subsumed	Fn (Fe	
Fn (Vo[Fnm] .	subsumed	Fn (Fe	
Fn (Vo[Fnm] ⁑	subsumed	Fn (Fe	
Fn (Vo[Fnm] /	subsumed	Fn (Fe	
Fn (Vo[Fnm] ≠	subsumed	Fn (Fe	
Fn (Vo[Fnm] \	subsumed	Fn (Fe	
Fn (Vo[Fnm] ⍀	subsumed	Fn (Fe	
Fn (Vo[Fnm] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn (Vo[Fnm] D	subsumed	Fn (Fe	
Fn (Vo[Fnm] Da	subsumed	Fn (Fe	
Fn (Vo[Fnm] M	subsumed	Fn (Fe	
Fn (Vo[Fnm] Ma	subsumed	Fn (Fe	
Fn (Vo[Fnm] Vi	subsumed	Fn (Fe	
Fn (Vo[Fnm] Vf	subsumed	Fn (Fe	
Fn (Vo[Fnm] Vo	subsumed	Fn (Fe	
Fn (Vo[Fnm] Vu	subsumed	Fn (Fe	

Table 123. Source Input Enumeration: Func. Exprs., Fn (Vo[Fnd]

Sequence	Response	Equivalent	Trace
Fn (Vo[Fnd] E	illegal		
Fn (Vo[Fnd] Ea	Syntax Error	empty	4, 10
Fn (Vo[Fnd] Fea	illegal		
Fn (Vo[Fnd] Feaa	illegal		
Fn (Vo[Fnd] Fed	illegal		
Fn (Vo[Fnd] Feda	illegal		
Fn (Vo[Fnd] Fem	illegal		
Fn (Vo[Fnd] Fema	illegal		
Fn (Vo[Fnd] Feo	illegal		
Fn (Vo[Fnd] Fn	subsumed	Fn (Fe	
Fn (Vo[Fnd] Fnm	subsumed	Fn (Fe	
Fn (Vo[Fnd] Fnd	subsumed	Fn (Fe	
Fn (Vo[Fnd] [	subsumed	Fn (Fe	
Fn (Vo[Fnd]]	subsumed	Fn (Fe	
Fn (Vo[Fnd] (	subsumed	Fn (Fe	
Fn (Vo[Fnd])	wait	Fn Fnd	4
Fn (Vo[Fnd] ←	wait	Fn (	4
Fn (Vo[Fnd] ⁖	subsumed	Fn (Fe	
Fn (Vo[Fnd] ∘	subsumed	Fn (Fe	
Fn (Vo[Fnd] ¨	subsumed	Fn (Fe	
Fn (Vo[Fnd] .	subsumed	Fn (Fe	
Fn (Vo[Fnd] ⁑	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Vo[Fnd] /	subsumed	Fn (Fe	
Fn (Vo[Fnd] ≠	subsumed	Fn (Fe	
Fn (Vo[Fnd] \	subsumed	Fn (Fe	
Fn (Vo[Fnd] ↚	subsumed	Fn (Fe	
Fn (Vo[Fnd] Break	Interrupt	empty, top-level	D3
Fn (Vo[Fnd] D	subsumed	Fn (Fe	
Fn (Vo[Fnd] Da	subsumed	Fn (Fe	
Fn (Vo[Fnd] M	subsumed	Fn (Fe	
Fn (Vo[Fnd] Ma	subsumed	Fn (Fe	
Fn (Vo[Fnd] Vi	subsumed	Fn (Fe	
Fn (Vo[Fnd] Vf	subsumed	Fn (Fe	
Fn (Vo[Fnd] Vo	subsumed	Fn (Fe	
Fn (Vo[Fnd] Vu	subsumed	Fn (Fe	

Table 124. Source Input Enumeration: Func. Exprs., Fn (Vo[◌̈]

Sequence	Response	Equivalent	Trace
Fn (Vo[◌̈] E	illegal		
Fn (Vo[◌̈] Ea	subsumed	Fn (Fe	
Fn (Vo[◌̈] Fea	illegal		
Fn (Vo[◌̈] Feaa	illegal		
Fn (Vo[◌̈] Fed	illegal		
Fn (Vo[◌̈] Feda	illegal		
Fn (Vo[◌̈] Fem	illegal		
Fn (Vo[◌̈] Fema	illegal		
Fn (Vo[◌̈] Feo	illegal		
Fn (Vo[◌̈] Fn	subsumed	Fn (Fe	
Fn (Vo[◌̈] Fnm	subsumed	Fn (Fe	
Fn (Vo[◌̈] Fnd	subsumed	Fn (Fe	
Fn (Vo[◌̈] [	subsumed	Fn (Fe	
Fn (Vo[◌̈]]	subsumed	Fn (Fe	
Fn (Vo[◌̈] (	subsumed	Fn (Fe	
Fn (Vo[◌̈])	ambivalent	Fn ◌̈	4, D5
Fn (Vo[◌̈] ←	wait	Fn (	4, D5

Sequence	Response	Equivalent	Trace
Fn (Vo[⁖] ⁖	subsumed	Fn (Fe	
Fn (Vo[⁖] ∘	subsumed	Fn (Fe	
Fn (Vo[⁖] ⁘	subsumed	Fn (Fe	
Fn (Vo[⁖] .	subsumed	Fn (Fe	
Fn (Vo[⁖] ⁑	subsumed	Fn (Fe	
Fn (Vo[⁖] /	subsumed	Fn (Fe	
Fn (Vo[⁖] ⁄	subsumed	Fn (Fe	
Fn (Vo[⁖] \	subsumed	Fn (Fe	
Fn (Vo[⁖] ⅄	subsumed	Fn (Fe	
Fn (Vo[⁖] Break	Interrupt	empty, top-level	D3
Fn (Vo[⁖] D	subsumed	Fn (Fe	
Fn (Vo[⁖] Da	subsumed	Fn (Fe	
Fn (Vo[⁖] M	subsumed	Fn (Fe	
Fn (Vo[⁖] Ma	subsumed	Fn (Fe	
Fn (Vo[⁖] Vi	subsumed	Fn (Fe	
Fn (Vo[⁖] Vf	subsumed	Fn (Fe	
Fn (Vo[⁖] Vo	subsumed	Fn (Fe	
Fn (Vo[⁖] Vu	subsumed	Fn (Fe	

Table 125. Source Input Enumeration: Func. Exprs., Fn (Vo[∘]

Sequence	Response	Equivalent	Trace
Fn (Vo[∘] E	illegal		
Fn (Vo[∘] Ea	subsumed	Fn (Fe	
Fn (Vo[∘] Fea	illegal		
Fn (Vo[∘] Feaa	illegal		
Fn (Vo[∘] Fed	illegal		
Fn (Vo[∘] Feda	illegal		
Fn (Vo[∘] Fem	illegal		
Fn (Vo[∘] Fema	illegal		
Fn (Vo[∘] Feo	illegal		
Fn (Vo[∘] Fn	subsumed	Fn (Fe	
Fn (Vo[∘] Fnm	subsumed	Fn (Fe	
Fn (Vo[∘] Fnd	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Vo[∘] [	subsumed	Fn (Fe	
Fn (Vo[∘]]	subsumed	Fn (Fe	
Fn (Vo[∘] (	subsumed	Fn (Fe	
Fn (Vo[∘])	wait	Fn ∘	4, D5
Fn (Vo[∘] ←	wait	Fn (	4, D5
Fn (Vo[∘] ¨̃	subsumed	Fn (Fe	
Fn (Vo[∘] ∘	subsumed	Fn (Fe	
Fn (Vo[∘] ¨	subsumed	Fn (Fe	
Fn (Vo[∘] .	subsumed	Fn (Fe	
Fn (Vo[∘] ¨*	subsumed	Fn (Fe	
Fn (Vo[∘] /	subsumed	Fn (Fe	
Fn (Vo[∘] ≠	subsumed	Fn (Fe	
Fn (Vo[∘] \	subsumed	Fn (Fe	
Fn (Vo[∘] ↚	subsumed	Fn (Fe	
Fn (Vo[∘] Break	Interrupt	empty, top-level	D3
Fn (Vo[∘] D	subsumed	Fn (Fe	
Fn (Vo[∘] Da	subsumed	Fn (Fe	
Fn (Vo[∘] M	subsumed	Fn (Fe	
Fn (Vo[∘] Ma	subsumed	Fn (Fe	
Fn (Vo[∘] Vi	subsumed	Fn (Fe	
Fn (Vo[∘] Vf	subsumed	Fn (Fe	
Fn (Vo[∘] Vo	subsumed	Fn (Fe	
Fn (Vo[∘] Vu	subsumed	Fn (Fe	

Table 126. Source Input Enumeration: Func. Exprs., Fn (Vo[¨]

Sequence	Response	Equivalent	Trace
Fn (Vo[¨] E	illegal		
Fn (Vo[¨] Ea	subsumed	Fn (Fe	
Fn (Vo[¨] Fea	illegal		
Fn (Vo[¨] Feaa	illegal		
Fn (Vo[¨] Fed	illegal		
Fn (Vo[¨] Feda	illegal		
Fn (Vo[¨] Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn (Vo[¨] Fema	illegal		
Fn (Vo[¨] Feo	illegal		
Fn (Vo[¨] Fn	subsumed	Fn (Fe	
Fn (Vo[¨] Fnm	subsumed	Fn (Fe	
Fn (Vo[¨] Fnd	subsumed	Fn (Fe	
Fn (Vo[¨] [	subsumed	Fn (Fe	
Fn (Vo[¨]]	subsumed	Fn (Fe	
Fn (Vo[¨] (	subsumed	Fn (Fe	
Fn (Vo[¨])	ambivalent	Fn ¨	4, D5
Fn (Vo[¨] ←	wait	Fn (	4, D5
Fn (Vo[¨] ¨̃	subsumed	Fn (Fe	
Fn (Vo[¨] ∘	subsumed	Fn (Fe	
Fn (Vo[¨] ¨	subsumed	Fn (Fe	
Fn (Vo[¨] .	subsumed	Fn (Fe	
Fn (Vo[¨] ¨*	subsumed	Fn (Fe	
Fn (Vo[¨] /	subsumed	Fn (Fe	
Fn (Vo[¨] ≠	subsumed	Fn (Fe	
Fn (Vo[¨] \	subsumed	Fn (Fe	
Fn (Vo[¨] ↚	subsumed	Fn (Fe	
Fn (Vo[¨] Break	Interrupt	empty, top-level	D3
Fn (Vo[¨] D	subsumed	Fn (Fe	
Fn (Vo[¨] Da	subsumed	Fn (Fe	
Fn (Vo[¨] M	subsumed	Fn (Fe	
Fn (Vo[¨] Ma	subsumed	Fn (Fe	
Fn (Vo[¨] Vi	subsumed	Fn (Fe	
Fn (Vo[¨] Vf	subsumed	Fn (Fe	
Fn (Vo[¨] Vo	subsumed	Fn (Fe	
Fn (Vo[¨] Vu	subsumed	Fn (Fe	

Table 127. Source Input Enumeration: Func. Exprs., Fn (Vo[.]

Sequence	Response	Equivalent	Trace
Fn (Vo[.] E	illegal		
Fn (Vo[.] Ea	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Vo[.] Fea	illegal		
Fn (Vo[.] Feaa	illegal		
Fn (Vo[.] Fed	illegal		
Fn (Vo[.] Feda	illegal		
Fn (Vo[.] Fem	illegal		
Fn (Vo[.] Fema	illegal		
Fn (Vo[.] Feo	illegal		
Fn (Vo[.] Fn	subsumed	Fn (Fe	
Fn (Vo[.] Fnm	subsumed	Fn (Fe	
Fn (Vo[.] Fnd	subsumed	Fn (Fe	
Fn (Vo[.] [	subsumed	Fn (Fe	
Fn (Vo[.]]	subsumed	Fn (Fe	
Fn (Vo[.] (	subsumed	Fn (Fe	
Fn (Vo[.])	wait	Fn .	4, D5
Fn (Vo[.] ←	wait	Fn (	4, D5
Fn (Vo[.] ˜	subsumed	Fn (Fe	
Fn (Vo[.] ∘	subsumed	Fn (Fe	
Fn (Vo[.] ¨	subsumed	Fn (Fe	
Fn (Vo[.] .	subsumed	Fn (Fe	
Fn (Vo[.] ⁑	subsumed	Fn (Fe	
Fn (Vo[.] /	subsumed	Fn (Fe	
Fn (Vo[.] ≠	subsumed	Fn (Fe	
Fn (Vo[.] \	subsumed	Fn (Fe	
Fn (Vo[.] ∤	subsumed	Fn (Fe	
Fn (Vo[.] Break	Interrupt	empty, top-level	D3
Fn (Vo[.] D	subsumed	Fn (Fe	
Fn (Vo[.] Da	subsumed	Fn (Fe	
Fn (Vo[.] M	subsumed	Fn (Fe	
Fn (Vo[.] Ma	subsumed	Fn (Fe	
Fn (Vo[.] Vi	subsumed	Fn (Fe	
Fn (Vo[.] Vf	subsumed	Fn (Fe	
Fn (Vo[.] Vo	subsumed	Fn (Fe	
Fn (Vo[.] Vu	subsumed	Fn (Fe	

Table 128. Source Input Enumeration: Func. Exprs., Fn (Vo[⁑]

Sequence	Response	Equivalent	Trace
Fn (Vo[⁑] E	illegal		
Fn (Vo[⁑] Ea	subsumed	Fn (Fe	
Fn (Vo[⁑] Fea	illegal		
Fn (Vo[⁑] Feaa	illegal		
Fn (Vo[⁑] Fed	illegal		
Fn (Vo[⁑] Feda	illegal		
Fn (Vo[⁑] Fem	illegal		
Fn (Vo[⁑] Fema	illegal		
Fn (Vo[⁑] Feo	illegal		
Fn (Vo[⁑] Fn	subsumed	Fn (Fe	
Fn (Vo[⁑] Fnm	subsumed	Fn (Fe	
Fn (Vo[⁑] Fnd	subsumed	Fn (Fe	
Fn (Vo[⁑] [	subsumed	Fn (Fe	
Fn (Vo[⁑]]	subsumed	Fn (Fe	
Fn (Vo[⁑] (	subsumed	Fn (Fe	
Fn (Vo[⁑])	wait	Fn ⁑	4, D5
Fn (Vo[⁑] ←	wait	Fn (	4, D5
Fn (Vo[⁑] ⁓	subsumed	Fn (Fe	
Fn (Vo[⁑] ∘	subsumed	Fn (Fe	
Fn (Vo[⁑] ¨	subsumed	Fn (Fe	
Fn (Vo[⁑] .	subsumed	Fn (Fe	
Fn (Vo[⁑] ⁑	subsumed	Fn (Fe	
Fn (Vo[⁑] /	subsumed	Fn (Fe	
Fn (Vo[⁑] ≠	subsumed	Fn (Fe	
Fn (Vo[⁑] \	subsumed	Fn (Fe	
Fn (Vo[⁑] ⍀	subsumed	Fn (Fe	
Fn (Vo[⁑] Break	Interrupt	empty, top-level	D3
Fn (Vo[⁑] D	subsumed	Fn (Fe	
Fn (Vo[⁑] Da	subsumed	Fn (Fe	
Fn (Vo[⁑] M	subsumed	Fn (Fe	
Fn (Vo[⁑] Ma	subsumed	Fn (Fe	
Fn (Vo[⁑] Vi	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Vo[⁑] Vf	subsumed	Fn (Fe	
Fn (Vo[⁑] Vo	subsumed	Fn (Fe	
Fn (Vo[⁑] Vu	subsumed	Fn (Fe	

Table 129. Source Input Enumeration: Func. Exprs., Fn (Vo[/ ≠]

Sequence	Response	Equivalent	Trace
Fn (Vo[/ ≠] E	illegal		
Fn (Vo[/ ≠] Ea	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Fea	illegal		
Fn (Vo[/ ≠] Feaa	illegal		
Fn (Vo[/ ≠] Fed	illegal		
Fn (Vo[/ ≠] Feda	illegal		
Fn (Vo[/ ≠] Fem	illegal		
Fn (Vo[/ ≠] Fema	illegal		
Fn (Vo[/ ≠] Feo	illegal		
Fn (Vo[/ ≠] Fn	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Fnm	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Fnd	subsumed	Fn (Fe	
Fn (Vo[/ ≠] [	subsumed	Fn (Fe	
Fn (Vo[/ ≠]]	subsumed	Fn (Fe	
Fn (Vo[/ ≠] (	subsumed	Fn (Fe	
Fn (Vo[/ ≠])	ambivalent axis	Fn /	4, D5
Fn (Vo[/ ≠] ←	wait	Fn (	4, D5
Fn (Vo[/ ≠] ⁐	subsumed	Fn (Fe	
Fn (Vo[/ ≠] ∘	subsumed	Fn (Fe	
Fn (Vo[/ ≠] ¨	subsumed	Fn (Fe	
Fn (Vo[/ ≠] .	subsumed	Fn (Fe	
Fn (Vo[/ ≠] ⁑	subsumed	Fn (Fe	
Fn (Vo[/ ≠] /	subsumed	Fn (Fe	
Fn (Vo[/ ≠] ≠	subsumed	Fn (Fe	
Fn (Vo[/ ≠] \	subsumed	Fn (Fe	
Fn (Vo[/ ≠] ↚	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn (Vo[/ ≠] D	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Da	subsumed	Fn (Fe	
Fn (Vo[/ ≠] M	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Ma	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Vi	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Vf	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Vo	subsumed	Fn (Fe	
Fn (Vo[/ ≠] Vu	subsumed	Fn (Fe	

Table 130. Source Input Enumeration: Func. Exprs., Fn (Vo[\ ≒]

Sequence	Response	Equivalent	Trace
Fn (Vo[\ ≒] E	illegal		
Fn (Vo[\ ≒] Ea	subsumed	Fn (Fe	
Fn (Vo[\ ≒] Fea	illegal		
Fn (Vo[\ ≒] Feaa	illegal		
Fn (Vo[\ ≒] Fed	illegal		
Fn (Vo[\ ≒] Feda	illegal		
Fn (Vo[\ ≒] Fem	illegal		
Fn (Vo[\ ≒] Fema	illegal		
Fn (Vo[\ ≒] Feo	illegal		
Fn (Vo[\ ≒] Fn	subsumed	Fn (Fe	
Fn (Vo[\ ≒] Fnm	subsumed	Fn (Fe	
Fn (Vo[\ ≒] Fnd	subsumed	Fn (Fe	
Fn (Vo[\ ≒] [	subsumed	Fn (Fe	
Fn (Vo[\ ≒]]	subsumed	Fn (Fe	
Fn (Vo[\ ≒] (	subsumed	Fn (Fe	
Fn (Vo[\ ≒])	monadic axis	Fn \	4, D5
Fn (Vo[\ ≒] ←	wait	Fn (	4, D5
Fn (Vo[\ ≒] ⍨	subsumed	Fn (Fe	
Fn (Vo[\ ≒] ∘	subsumed	Fn (Fe	
Fn (Vo[\ ≒] ¨	subsumed	Fn (Fe	
Fn (Vo[\ ≒] .	subsumed	Fn (Fe	
Fn (Vo[\ ≒] ⍣	subsumed	Fn (Fe	

Sequence	Response	Equivalent	Trace
Fn (Vo[\ ↚] /	subsumed	Fn (Fe	
Fn (Vo[\ ↚] ≠	subsumed	Fn (Fe	
Fn (Vo[\ ↚] \	subsumed	Fn (Fe	
Fn (Vo[\ ↚] ↚	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Break	Interrupt	empty, top-level	D3
Fn (Vo[\ ↚] D	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Da	subsumed	Fn (Fe	
Fn (Vo[\ ↚] M	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Ma	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Vi	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Vf	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Vo	subsumed	Fn (Fe	
Fn (Vo[\ ↚] Vu	subsumed	Fn (Fe	

Table 131. Source Input Enumeration: Function Expressions, Fn (Vu

Sequence	Response	Equivalent	Trace
Fn (Vu E	illegal		
Fn (Vu Ea	subsumed	Fn (Fe	
Fn (Vu Fea	illegal		
Fn (Vu Feaa	illegal		
Fn (Vu Fed	illegal		
Fn (Vu Feda	illegal		
Fn (Vu Fem	illegal		
Fn (Vu Fema	illegal		
Fn (Vu Feo	illegal		
Fn (Vu Fn	subsumed	Fn (Fe	
Fn (Vu Fnm	subsumed	Fn (Fe	
Fn (Vu Fnd	subsumed	Fn (Fe	
Fn (Vu [	subsumed	Fn (Fe	
Fn (Vu]	subsumed	Fn (Fe	
Fn (Vu (	subsumed	Fn (Fe	
Fn (Vu)	Value Error	empty	4, 10
Fn (Vu ←	wait	Fn (	4

Sequence	Response	Equivalent	Trace
Fn (Vu ⁖	subsumed	Fn (Fe	
Fn (Vu ∘	subsumed	Fn (Fe	
Fn (Vu ¨	subsumed	Fn (Fe	
Fn (Vu .	subsumed	Fn (Fe	
Fn (Vu ⁑	subsumed	Fn (Fe	
Fn (Vu /	subsumed	Fn (Fe	
Fn (Vu ≠	subsumed	Fn (Fe	
Fn (Vu \	subsumed	Fn (Fe	
Fn (Vu ↚	subsumed	Fn (Fe	
Fn (Vu Break	Interrupt	empty, top-level	D3
Fn (Vu D	subsumed	Fn (Fe	
Fn (Vu Da	subsumed	Fn (Fe	
Fn (Vu M	subsumed	Fn (Fe	
Fn (Vu Ma	subsumed	Fn (Fe	
Fn (Vu Vi	subsumed	Fn (Fe	
Fn (Vu Vf	subsumed	Fn (Fe	
Fn (Vu Vo	subsumed	Fn (Fe	
Fn (Vu Vu	subsumed	Fn (Fe	

Table 132. Source Input Enumeration: Function Expressions, Fn ∘ (

Sequence	Response	Equivalent	Trace
Fn ∘ (E	illegal		
Fn ∘ (Ea	Syntax Error	empty	4, 10
Fn ∘ (Fea	wait		4
Fn ∘ (Feaa	wait	Fn ∘ (Fea	4
Fn ∘ (Fed	Syntax Error	empty	4, 10
Fn ∘ (Feda	Syntax Error	empty	4, 10
Fn ∘ (Fem	wait	Fn ∘ (Fea	4
Fn ∘ (Fema	wait	Fn ∘ (Fea	4
Fn ∘ (Feo	Syntax Error	empty	4, 10
Fn ∘ (Fn	subsumed	Fn ∘ (Fea	
Fn ∘ (Fnm	subsumed	Fn ∘ (Fea	
Fn ∘ (Fnd	subsumed	Fn ∘ (Fea	

Sequence	Response	Equivalent	Trace
Fn ∘ ([	subsumed	Fn ∘ (Fea	
Fn ∘ ( ]	subsumed	Fn ∘ (Fea	
Fn ∘ ((	subsumed	Fn ∘ (Fea	
Fn ∘ ( )	Syntax Error	empty	4, 10
Fn ∘ (←	subsumed	Fn ∘ (Fea	
Fn ∘ (⁖	subsumed	Fn ∘ (Fea	
Fn ∘ (∘	subsumed	Fn ∘ (Fea	
Fn ∘ (¨	subsumed	Fn ∘ (Fea	
Fn ∘ (.	subsumed	Fn ∘ (Fea	
Fn ∘ (⁑	subsumed	Fn ∘ (Fea	
Fn ∘ (/	subsumed	Fn ∘ (Fea	
Fn ∘ (≠	subsumed	Fn ∘ (Fea	
Fn ∘ (\	subsumed	Fn ∘ (Fea	
Fn ∘ (↚	subsumed	Fn ∘ (Fea	
Fn ∘ (Break	Interrupt	empty, top-level	D3
Fn ∘ (D	subsumed	Fn ∘ (Fea	
Fn ∘ (Da	subsumed	Fn ∘ (Fea	
Fn ∘ (M	subsumed	Fn ∘ (Fea	
Fn ∘ (Ma	subsumed	Fn ∘ (Fea	
Fn ∘ (Vi	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf	wait		4
Fn ∘ (Vo	wait		4
Fn ∘ (Vu	wait		4

Table 133. Source Input Enumeration: Function Expressions, Fn . (

Sequence	Response	Equivalent	Trace
Fn . (E	illegal		
Fn . (Ea	Syntax Error	empty	4, 10
Fn . (Fea	wait		4
Fn . (Feaa	wait	Fn . (Fea	4
Fn . (Fed	wait	Fn . (Fea	4
Fn . (Feda	wait	Fn . (Fea	4
Fn . (Fem	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fn . (Fema	Syntax Error	empty	4, 10
Fn . (Feo	Syntax Error	empty	4, 10
Fn . (Fn	subsumed	Fn . (Fe	
Fn . (Fnm	subsumed	Fn . (Fe	
Fn . (Fnd	subsumed	Fn . (Fe	
Fn . ([	subsumed	Fn . (Fe	
Fn . ( ]	subsumed	Fn . (Fe	
Fn . ((	subsumed	Fn . (Fe	
Fn . ( )	Syntax Error	empty	4, 10
Fn . (←	subsumed	Fn . (Fe	
Fn . (⁖	subsumed	Fn . (Fe	
Fn . (∘	subsumed	Fn . (Fe	
Fn . (¨	subsumed	Fn . (Fe	
Fn . (.	subsumed	Fn . (Fe	
Fn . (⁑	subsumed	Fn . (Fe	
Fn . (/	subsumed	Fn . (Fe	
Fn . (≠	subsumed	Fn . (Fe	
Fn . (\	subsumed	Fn . (Fe	
Fn . (↚	subsumed	Fn . (Fe	
Fn . (Break	Interrupt	empty, top-level	D3
Fn . (D	subsumed	Fn . (Fe	
Fn . (Da	subsumed	Fn . (Fe	
Fn . (M	subsumed	Fn . (Fe	
Fn . (Ma	subsumed	Fn . (Fe	
Fn . (Vi	Value Error	empty	4, 10
Fn . (Vf	wait		4
Fn . (Vo	wait		4
Fn . (Vu	wait		4

Table 134. Source Input Enumeration: Function Expressions, Fn \ [

Sequence	Response	Equivalent	Trace
Fn \ [E	wait		4
Fn \ [Ea	subsumed	Fn \ [E	

Sequence	Response	Equivalent	Trace
Fn \ [Fea	illegal		
Fn \ [Feaa	illegal		
Fn \ [Fed	illegal		
Fn \ [Feda	illegal		
Fn \ [Fem	illegal		
Fn \ [Fema	illegal		
Fn \ [Feo	illegal		
Fn \ [Fn	subsumed	Fn \ [E	
Fn \ [Fnm	subsumed	Fn \ [E	
Fn \ [Fnd	subsumed	Fn \ [E	
Fn \ [[	subsumed	Fn \ [E	
Fn \ [ ]	Syntax Error	empty	4, 10
Fn \ [(	subsumed	Fn \ [E	
Fn \ [ )	subsumed	Fn \ [E	
Fn \ [←	subsumed	Fn \ [E	
Fn \ [⁖	subsumed	Fn \ [E	
Fn \ [∘	subsumed	Fn \ [E	
Fn \ [¨	subsumed	Fn \ [E	
Fn \ [.	subsumed	Fn \ [E	
Fn \ [⁑	subsumed	Fn \ [E	
Fn \ [/	subsumed	Fn \ [E	
Fn \ [≠	subsumed	Fn \ [E	
Fn \ [\	subsumed	Fn \ [E	
Fn \ [↚	subsumed	Fn \ [E	
Fn \ [Break	Interrupt	empty, top-level	D3
Fn \ [D	subsumed	Fn \ [E	
Fn \ [Da	subsumed	Fn \ [E	
Fn \ [M	subsumed	Fn \ [E	
Fn \ [Ma	subsumed	Fn \ [E	
Fn \ [Vi	subsumed	Fn \ [E	
Fn \ [Vf	subsumed	Fn \ [E	
Fn \ [Vo	subsumed	Fn \ [E	
Fn \ [Vu	subsumed	Fn \ [E	

Table 135. Source Input Enumeration: Function Expressions, Fn \ (

Sequence	Response	Equivalent	Trace
Fn \ (E	illegal		
Fn \ (Ea	Syntax Error	empty	4, 10
Fn \ (Fea	Syntax Error	empty	4, 10
Fn \ (Feaa	Syntax Error	empty	4, 10
Fn \ (Fed	Syntax Error	empty	4, 10
Fn \ (Feda	Syntax Error	empty	4, 10
Fn \ (Fem	Syntax Error	empty	4, 10
Fn \ (Fema	Syntax Error	empty	4, 10
Fn \ (Feo[Fnm]	wait	Fn (Feo[Fnm]	4
Fn \ (Feo[Fnd]	wait	Fn (Feo[Fnd]	4
Fn \ (Feo[¨˜]	Syntax Error	empty	4, 10
Fn \ (Feo[∘]	wait		4
Fn \ (Feo[¨]	wait		4
Fn \ (Feo[⁑]	wait		4
Fn \ (Feo[.]	wait	Fn (Feo[.]	4
Fn \ (Feo[/]	wait	Fn (Feo[/]	4
Fn \ (Feo[≠]	wait	Fn \ (Feo[/]	4
Fn \ (Feo[\]	wait	Fn (Feo[\]	4
Fn \ (Feo[↚]	wait	Fn \ (Feo[\]	4
Fn \ (Fn	subsumed	Fn \ (Fe	
Fn \ (Fnm	subsumed	Fn \ (Fe	
Fn \ (Fnd	subsumed	Fn \ (Fe	
Fn \ ([	subsumed	Fn \ (Fe	
Fn \ ( ]	subsumed	Fn \ (Fe	
Fn \ ((	subsumed	Fn \ (Fe	
Fn \ ( )	Syntax Error	empty	4, 10
Fn \ (←	subsumed	Fn \ (Fe	
Fn \ (¨˜	subsumed	Fn \ (Fe	
Fn \ (∘	subsumed	Fn \ (Fe	
Fn \ (¨	subsumed	Fn \ (Fe	
Fn \ (.	subsumed	Fn \ (Fe	
Fn \ (⁑	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (/	subsumed	Fn \ (Fe	
Fn \ (≠	subsumed	Fn \ (Fe	
Fn \ (\	subsumed	Fn \ (Fe	
Fn \ (↚	subsumed	Fn \ (Fe	
Fn \ (Break	Interrupt	empty, top-level	D3
Fn \ (D	subsumed	Fn \ (Fe	
Fn \ (Da	subsumed	Fn \ (Fe	
Fn \ (M	subsumed	Fn \ (Fe	
Fn \ (Ma	subsumed	Fn \ (Fe	
Fn \ (Vi	subsumed	Fn \ (Fe	
Fn \ (Vf	wait		4
Fn \ (Vo[Fnm]	wait		4
Fn \ (Vo[Fnd]	wait		4
Fn \ (Vo[˜]	wait		4, D5
Fn \ (Vo[∘]	wait		4, D5
Fn \ (Vo[¨]	wait		4, D5
Fn \ (Vo[⁑]	wait		4, D5
Fn \ (Vo[.]	wait		4, D5
Fn \ (Vo[/]	wait		4, D5
Fn \ (Vo[≠]	wait	Fn \ (Vo[/]	4, D5
Fn \ (Vo[\]	wait		4, D5
Fn \ (Vo[↚]	wait	Fn \ (Vo[\]	4, D5
Fn \ (Vu	wait		4

Table 136. Source Input Enumeration: Function Expressions, Fn \ ∘

Sequence	Response	Equivalent	Trace
Fn \ ∘ E	illegal		
Fn \ ∘ Ea	Syntax Error	empty	4, 10
Fn \ ∘ Fea	illegal		
Fn \ ∘ Feaa	illegal		
Fn \ ∘ Fed	illegal		
Fn \ ∘ Feda	illegal		
Fn \ ∘ Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn \ ∘ Fema	illegal		
Fn \ ∘ Feo	illegal		
Fn \ ∘ Fn	monadic	Ea ∘ Fn	4
Fn \ ∘ Fnm	Syntax Error	empty	4, 10
Fn \ ∘ Fnd	Syntax Error	empty	4, 10
Fn \ ∘ [	Syntax Error	empty	4, 10
Fn \ ∘]	Syntax Error	empty	4, 10
Fn \ ∘ (	wait		4
Fn \ ∘)	Syntax Error	empty	4, 10
Fn \ ∘ ←	Syntax Error	empty	4, 10
Fn \ ∘ ¨	Syntax Error	empty	4, 10
Fn \ ∘ ∘	Syntax Error	empty	4, 10
Fn \ ∘ ¨	Syntax Error	empty	4, 10
Fn \ ∘ .	Syntax Error	empty	4, 10
Fn \ ∘ ⍣	Syntax Error	empty	4, 10
Fn \ ∘ /	Syntax Error	empty	4, 10
Fn \ ∘ ⌿	Syntax Error	empty	4, 10
Fn \ ∘ \	Syntax Error	empty	4, 10
Fn \ ∘ ⍀	Syntax Error	empty	4, 10
Fn \ ∘ Break	Interrupt	empty, top-level	D3
Fn \ ∘ D	Syntax Error	empty	4, 10
Fn \ ∘ Da	Syntax Error	empty	4, 10
Fn \ ∘ M	monadic	Ea ∘ Fn	4
Fn \ ∘ Ma	monadic	Ea ∘ Fn	4
Fn \ ∘ Vi	Value Error	empty	4, 10
Fn \ ∘ Vf	monadic	Ea ∘ Fn	4
Fn \ ∘ Vo	Syntax Error	empty	4, 10
Fn \ ∘ Vu	Value Error	empty	4, 10

Table 137. Source Input Enumeration: Function Expressions, Fn \ ⍣

Sequence	Response	Equivalent	Trace
Fn \ ⍣ E	illegal		
Fn \ ⍣ Ea	monadic	Ea ∘ Fn	4

Sequence	Response	Equivalent	Trace
Fn \ ¨ * Fea	illegal		
Fn \ ¨ * Feaa	illegal		
Fn \ ¨ * Fed	illegal		
Fn \ ¨ * Feda	illegal		
Fn \ ¨ * Fem	illegal		
Fn \ ¨ * Fema	illegal		
Fn \ ¨ * Feo	illegal		
Fn \ ¨ * Fn	monadic	Ea ∘ Fn	4
Fn \ ¨ * Fnm	Syntax Error	empty	4, 10
Fn \ ¨ * Fnd	Syntax Error	empty	4, 10
Fn \ ¨ * [	Syntax Error	empty	4, 10
Fn \ ¨ *]	Syntax Error	empty	4, 10
Fn \ ¨ * (	wait		4
Fn \ ¨ *)	Syntax Error	empty	4, 10
Fn \ ¨ * ←	Syntax Error	empty	4, 10
Fn \ ¨ * ¯	Syntax Error	empty	4, 10
Fn \ ¨ * ∘	Syntax Error	empty	4, 10
Fn \ ¨ * ¨	Syntax Error	empty	4, 10
Fn \ ¨ * .	Syntax Error	empty	4, 10
Fn \ ¨ * ¨	Syntax Error	empty	4, 10
Fn \ ¨ * /	monadic	Ea ∘ Fn	4
Fn \ ¨ * ⁄	monadic	Ea ∘ Fn	4
Fn \ ¨ * \	monadic	Ea ∘ Fn	4
Fn \ ¨ * ⍀	monadic	Ea ∘ Fn	4
Fn \ ¨ * Break	Interrupt	empty, top-level	D3
Fn \ ¨ * D	monadic	Ea ∘ Fn	4
Fn \ ¨ * Da	monadic	Ea ∘ Fn	4
Fn \ ¨ * M	monadic	Ea ∘ Fn	4
Fn \ ¨ * Ma	monadic	Ea ∘ Fn	4
Fn \ ¨ * Vi	Value Error	empty	4, 10
Fn \ ¨ * Vf	monadic	Ea ∘ Fn	4
Fn \ ¨ * Vo	Syntax Error	empty	4, 10
Fn \ ¨ * Vu	Value Error	empty	4, 10

Table 138. Source Input Enumeration: Function Expressions, Da [E

Sequence	Response	Equivalent	Trace
Da [E E	illegal		
Da [E Ea	subsumed	Da [E	
Da [E Fea	illegal		
Da [E Feaa	illegal		
Da [E Fed	illegal		
Da [E Feda	illegal		
Da [E Fem	illegal		
Da [E Fema	illegal		
Da [E Feo	illegal		
Da [E Fn	subsumed	Da [E	
Da [E Fnm	subsumed	Da [E	
Da [E Fnd	subsumed	Da [E	
Da [E [	subsumed	Da [E	
Da [E]	dyadic	D	4
Da [E (	subsumed	Da [E	
Da [E)	subsumed	Da [E	
Da [E ←	subsumed	Da [E	
Da [E ¨	subsumed	Da [E	
Da [E ∘	subsumed	Da [E	
Da [E ¨	subsumed	Da [E	
Da [E .	subsumed	Da [E	
Da [E ¨	subsumed	Da [E	
Da [E /	subsumed	Da [E	
Da [E ⌿	subsumed	Da [E	
Da [E \	subsumed	Da [E	
Da [E ⍀	subsumed	Da [E	
Da [E Break	Interrupt	empty, top-level	D3
Da [E D	subsumed	Da [E	
Da [E Da	subsumed	Da [E	
Da [E M	subsumed	Da [E	
Da [E Ma	subsumed	Da [E	
Da [E Vi	subsumed	Da [E	

Sequence	Response	Equivalent	Trace
Da [E Vf	subsumed	Da [E	
Da [E Vo	subsumed	Da [E	
Da [E Vu	subsumed	Da [E	

Table 139. Source Input Enumeration: Func. Exprs., Da (Feo[∘]

Sequence	Response	Equivalent	Trace
Da (Feo[∘] E	illegal		
Da (Feo[∘] Ea	subsumed	Da (Fe	
Da (Feo[∘] Fea	illegal		
Da (Feo[∘] Feaa	illegal		
Da (Feo[∘] Fed	illegal		
Da (Feo[∘] Feda	illegal		
Da (Feo[∘] Fem	illegal		
Da (Feo[∘] Fema	illegal		
Da (Feo[∘] Feo	illegal		
Da (Feo[∘] Fn	subsumed	Da (Fe	
Da (Feo[∘] Fnm	subsumed	Da (Fe	
Da (Feo[∘] Fnd	subsumed	Da (Fe	
Da (Feo[∘] [	subsumed	Da (Fe	
Da (Feo[∘]]	subsumed	Da (Fe	
Da (Feo[∘] (	subsumed	Da (Fe	
Da (Feo[∘])	wait	Da ∘	4
Da (Feo[∘] ←	subsumed	Da (Fe	
Da (Feo[∘] ⍨	subsumed	Da (Fe	
Da (Feo[∘] ∘	subsumed	Da (Fe	
Da (Feo[∘] ¨	subsumed	Da (Fe	
Da (Feo[∘] .	subsumed	Da (Fe	
Da (Feo[∘] ⍣	subsumed	Da (Fe	
Da (Feo[∘] /	subsumed	Da (Fe	
Da (Feo[∘] ⌿	subsumed	Da (Fe	
Da (Feo[∘] \	subsumed	Da (Fe	
Da (Feo[∘] ⍀	subsumed	Da (Fe	
Da (Feo[∘] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Da (Feo[⍥] D	subsumed	Da (Fe	
Da (Feo[⍥] Da	subsumed	Da (Fe	
Da (Feo[⍥] M	subsumed	Da (Fe	
Da (Feo[⍥] Ma	subsumed	Da (Fe	
Da (Feo[⍥] Vi	subsumed	Da (Fe	
Da (Feo[⍥] Vf	subsumed	Da (Fe	
Da (Feo[⍥] Vo	subsumed	Da (Fe	
Da (Feo[⍥] Vu	subsumed	Da (Fe	

Table 140. Source Input Enumeration: Func. Exprs., Da (Feo[⍨]

Sequence	Response	Equivalent	Trace
Da (Feo[⍨] E	illegal		
Da (Feo[⍨] Ea	subsumed	Da (Fe	
Da (Feo[⍨] Fea	illegal		
Da (Feo[⍨] Feaa	illegal		
Da (Feo[⍨] Fed	illegal		
Da (Feo[⍨] Feda	illegal		
Da (Feo[⍨] Fem	illegal		
Da (Feo[⍨] Fema	illegal		
Da (Feo[⍨] Feo	illegal		
Da (Feo[⍨] Fn	subsumed	Da (Fe	
Da (Feo[⍨] Fnm	subsumed	Da (Fe	
Da (Feo[⍨] Fnd	subsumed	Da (Fe	
Da (Feo[⍨] [	subsumed	Da (Fe	
Da (Feo[⍨]]	subsumed	Da (Fe	
Da (Feo[⍨] (	subsumed	Da (Fe	
Da (Feo[⍨])	dyadic	Da ⍨	4
Da (Feo[⍨] ←	subsumed	Da (Fe	
Da (Feo[⍨] ⍨	subsumed	Da (Fe	
Da (Feo[⍨] ⍥	subsumed	Da (Fe	
Da (Feo[⍨] ⍨	subsumed	Da (Fe	
Da (Feo[⍨] .	subsumed	Da (Fe	
Da (Feo[⍨] ⍣	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Feo[¨] /	subsumed	Da (Fe	
Da (Feo[¨] ≠	subsumed	Da (Fe	
Da (Feo[¨] \	subsumed	Da (Fe	
Da (Feo[¨] ↚	subsumed	Da (Fe	
Da (Feo[¨] Break	Interrupt	empty, top-level	D3
Da (Feo[¨] D	subsumed	Da (Fe	
Da (Feo[¨] Da	subsumed	Da (Fe	
Da (Feo[¨] M	subsumed	Da (Fe	
Da (Feo[¨] Ma	subsumed	Da (Fe	
Da (Feo[¨] Vi	subsumed	Da (Fe	
Da (Feo[¨] Vf	subsumed	Da (Fe	
Da (Feo[¨] Vo	subsumed	Da (Fe	
Da (Feo[¨] Vu	subsumed	Da (Fe	

Table 141. Source Input Enumeration: Func. Exprs., Da (Feo[⁑]

Sequence	Response	Equivalent	Trace
Da (Feo[⁑] E	illegal		
Da (Feo[⁑] Ea	subsumed	Da (Fe	
Da (Feo[⁑] Fea	illegal		
Da (Feo[⁑] Feaa	illegal		
Da (Feo[⁑] Fed	illegal		
Da (Feo[⁑] Feda	illegal		
Da (Feo[⁑] Fem	illegal		
Da (Feo[⁑] Fema	illegal		
Da (Feo[⁑] Feo	illegal		
Da (Feo[⁑] Fn	subsumed	Da (Fe	
Da (Feo[⁑] Fnm	subsumed	Da (Fe	
Da (Feo[⁑] Fnd	subsumed	Da (Fe	
Da (Feo[⁑] [	subsumed	Da (Fe	
Da (Feo[⁑]]	subsumed	Da (Fe	
Da (Feo[⁑] (	subsumed	Da (Fe	
Da (Feo[⁑])	wait	Da ⁑	4
Da (Feo[⁑] ←	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Feo[⁑] ⁓	subsumed	Da (Fe	
Da (Feo[⁑] ∘	subsumed	Da (Fe	
Da (Feo[⁑] ¨	subsumed	Da (Fe	
Da (Feo[⁑] .	subsumed	Da (Fe	
Da (Feo[⁑] ⁑	subsumed	Da (Fe	
Da (Feo[⁑] /	subsumed	Da (Fe	
Da (Feo[⁑] ≠	subsumed	Da (Fe	
Da (Feo[⁑] \	subsumed	Da (Fe	
Da (Feo[⁑] ↚	subsumed	Da (Fe	
Da (Feo[⁑] Break	Interrupt	empty, top-level	D3
Da (Feo[⁑] D	subsumed	Da (Fe	
Da (Feo[⁑] Da	subsumed	Da (Fe	
Da (Feo[⁑] M	subsumed	Da (Fe	
Da (Feo[⁑] Ma	subsumed	Da (Fe	
Da (Feo[⁑] Vi	subsumed	Da (Fe	
Da (Feo[⁑] Vf	subsumed	Da (Fe	
Da (Feo[⁑] Vo	subsumed	Da (Fe	
Da (Feo[⁑] Vu	subsumed	Da (Fe	

Table 142. Source Input Enumeration: Function Expressions, Da (Vf

Sequence	Response	Equivalent	Trace
Da (Vf E	illegal		
Da (Vf Ea	subsumed	Da (Fe	
Da (Vf Fea	illegal		
Da (Vf Feaa	illegal		
Da (Vf Fed	illegal		
Da (Vf Feda	illegal		
Da (Vf Fem	illegal		
Da (Vf Fema	illegal		
Da (Vf Feo	illegal		
Da (Vf Fn	subsumed	Da (Fe	
Da (Vf Fnm	subsumed	Da (Fe	
Da (Vf Fnd	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Vf [	subsumed	Da (Fe	
Da (Vf]	subsumed	Da (Fe	
Da (Vf (	subsumed	Da (Fe	
Da (Vf)	Syntax Error	empty	4, 10
Da (Vf ←	wait	Da (	4
Da (Vf ⁖	subsumed	Da (Fe	
Da (Vf ∘	subsumed	Da (Fe	
Da (Vf ¨	subsumed	Da (Fe	
Da (Vf .	subsumed	Da (Fe	
Da (Vf ⁑	subsumed	Da (Fe	
Da (Vf /	subsumed	Da (Fe	
Da (Vf ≠	subsumed	Da (Fe	
Da (Vf \	subsumed	Da (Fe	
Da (Vf ↚	subsumed	Da (Fe	
Da (Vf Break	Interrupt	empty, top-level	D3
Da (Vf D	subsumed	Da (Fe	
Da (Vf Da	subsumed	Da (Fe	
Da (Vf M	subsumed	Da (Fe	
Da (Vf Ma	subsumed	Da (Fe	
Da (Vf Vi	subsumed	Da (Fe	
Da (Vf Vf	subsumed	Da (Fe	
Da (Vf Vo	subsumed	Da (Fe	
Da (Vf Vu	subsumed	Da (Fe	

Table 143. Source Input Enumeration: Func. Exprs., Da (Vo[Fnm]

Sequence	Response	Equivalent	Trace
Da (Vo[Fnm] E	illegal		
Da (Vo[Fnm] Ea	subsumed	Da (Fe	
Da (Vo[Fnm] Fea	illegal		
Da (Vo[Fnm] Feaa	illegal		
Da (Vo[Fnm] Fed	illegal		
Da (Vo[Fnm] Feda	illegal		
Da (Vo[Fnm] Fem	illegal		

Sequence	Response	Equivalent	Trace
Da (Vo[Fnm] Fema	illegal		
Da (Vo[Fnm] Feo	illegal		
Da (Vo[Fnm] Fn	subsumed	Da (Fe	
Da (Vo[Fnm] Fnm	subsumed	Da (Fe	
Da (Vo[Fnm] Fnd	subsumed	Da (Fe	
Da (Vo[Fnm] [	subsumed	Da (Fe	
Da (Vo[Fnm]]	subsumed	Da (Fe	
Da (Vo[Fnm] (	subsumed	Da (Fe	
Da (Vo[Fnm])	ambivalent	Da Fnm	4
Da (Vo[Fnm] ←	wait	Da (	4
Da (Vo[Fnm] ¨	subsumed	Da (Fe	
Da (Vo[Fnm] ∘	subsumed	Da (Fe	
Da (Vo[Fnm] ¨	subsumed	Da (Fe	
Da (Vo[Fnm] .	subsumed	Da (Fe	
Da (Vo[Fnm] ⍟	subsumed	Da (Fe	
Da (Vo[Fnm] /	subsumed	Da (Fe	
Da (Vo[Fnm] ⌿	subsumed	Da (Fe	
Da (Vo[Fnm] \	subsumed	Da (Fe	
Da (Vo[Fnm] ⍀	subsumed	Da (Fe	
Da (Vo[Fnm] Break	Interrupt	empty, top-level	D3
Da (Vo[Fnm] D	subsumed	Da (Fe	
Da (Vo[Fnm] Da	subsumed	Da (Fe	
Da (Vo[Fnm] M	subsumed	Da (Fe	
Da (Vo[Fnm] Ma	subsumed	Da (Fe	
Da (Vo[Fnm] Vi	subsumed	Da (Fe	
Da (Vo[Fnm] Vf	subsumed	Da (Fe	
Da (Vo[Fnm] Vo	subsumed	Da (Fe	
Da (Vo[Fnm] Vu	subsumed	Da (Fe	

Table 144. Source Input Enumeration: Func. Exprs., Da (Vo[Fnd]

Sequence	Response	Equivalent	Trace
Da (Vo[Fnd] E	illegal		
Da (Vo[Fnd] Ea	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Da (Vo[Fnd] Fea	illegal		
Da (Vo[Fnd] Feaa	illegal		
Da (Vo[Fnd] Fed	illegal		
Da (Vo[Fnd] Feda	illegal		
Da (Vo[Fnd] Fem	illegal		
Da (Vo[Fnd] Fema	illegal		
Da (Vo[Fnd] Feo	illegal		
Da (Vo[Fnd] Fn	subsumed	Da (Fe	
Da (Vo[Fnd] Fnm	subsumed	Da (Fe	
Da (Vo[Fnd] Fnd	subsumed	Da (Fe	
Da (Vo[Fnd] [	subsumed	Da (Fe	
Da (Vo[Fnd]]	subsumed	Da (Fe	
Da (Vo[Fnd] (	subsumed	Da (Fe	
Da (Vo[Fnd])	wait	Da Fnd	4
Da (Vo[Fnd] ←	wait	Da (	4
Da (Vo[Fnd] ¨˜	subsumed	Da (Fe	
Da (Vo[Fnd] ∘	subsumed	Da (Fe	
Da (Vo[Fnd] ¨	subsumed	Da (Fe	
Da (Vo[Fnd] .	subsumed	Da (Fe	
Da (Vo[Fnd] ¨*	subsumed	Da (Fe	
Da (Vo[Fnd] /	subsumed	Da (Fe	
Da (Vo[Fnd] ≠	subsumed	Da (Fe	
Da (Vo[Fnd] \	subsumed	Da (Fe	
Da (Vo[Fnd] ↚	subsumed	Da (Fe	
Da (Vo[Fnd] Break	Interrupt	empty, top-level	D3
Da (Vo[Fnd] D	subsumed	Da (Fe	
Da (Vo[Fnd] Da	subsumed	Da (Fe	
Da (Vo[Fnd] M	subsumed	Da (Fe	
Da (Vo[Fnd] Ma	subsumed	Da (Fe	
Da (Vo[Fnd] Vi	subsumed	Da (Fe	
Da (Vo[Fnd] Vf	subsumed	Da (Fe	
Da (Vo[Fnd] Vo	subsumed	Da (Fe	
Da (Vo[Fnd] Vu	subsumed	Da (Fe	

Table 145. Source Input Enumeration: Func. Exprs., Da (Vo[¨]

Sequence	Response	Equivalent	Trace
Da (Vo[¨] E	illegal		
Da (Vo[¨] Ea	subsumed	Da (Fe	
Da (Vo[¨] Fea	illegal		
Da (Vo[¨] Feaa	illegal		
Da (Vo[¨] Fed	illegal		
Da (Vo[¨] Feda	illegal		
Da (Vo[¨] Fem	illegal		
Da (Vo[¨] Fema	illegal		
Da (Vo[¨] Feo	illegal		
Da (Vo[¨] Fn	subsumed	Da (Fe	
Da (Vo[¨] Fnm	subsumed	Da (Fe	
Da (Vo[¨] Fnd	subsumed	Da (Fe	
Da (Vo[¨] [	subsumed	Da (Fe	
Da (Vo[¨]]	subsumed	Da (Fe	
Da (Vo[¨] (	subsumed	Da (Fe	
Da (Vo[¨])	ambivalent	Da ¨	4, D5
Da (Vo[¨] ←	wait	Da (	4, D5
Da (Vo[¨] ¨	subsumed	Da (Fe	
Da (Vo[¨] ∘	subsumed	Da (Fe	
Da (Vo[¨] ¨	subsumed	Da (Fe	
Da (Vo[¨] .	subsumed	Da (Fe	
Da (Vo[¨] *	subsumed	Da (Fe	
Da (Vo[¨] /	subsumed	Da (Fe	
Da (Vo[¨] ≠	subsumed	Da (Fe	
Da (Vo[¨] \	subsumed	Da (Fe	
Da (Vo[¨] ↚	subsumed	Da (Fe	
Da (Vo[¨] Break	Interrupt	empty, top-level	D3
Da (Vo[¨] D	subsumed	Da (Fe	
Da (Vo[¨] Da	subsumed	Da (Fe	
Da (Vo[¨] M	subsumed	Da (Fe	
Da (Vo[¨] Ma	subsumed	Da (Fe	
Da (Vo[¨] Vi	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Vo[¨] Vf	subsumed	Da (Fe	
Da (Vo[¨] Vo	subsumed	Da (Fe	
Da (Vo[¨] Vu	subsumed	Da (Fe	

Table 146. Source Input Enumeration: Func. Exprs., Da (Vo[∘]

Sequence	Response	Equivalent	Trace
Da (Vo[∘] E	illegal		
Da (Vo[∘] Ea	subsumed	Da (Fe	
Da (Vo[∘] Fea	illegal		
Da (Vo[∘] Feaa	illegal		
Da (Vo[∘] Fed	illegal		
Da (Vo[∘] Feda	illegal		
Da (Vo[∘] Fem	illegal		
Da (Vo[∘] Fema	illegal		
Da (Vo[∘] Feo	illegal		
Da (Vo[∘] Fn	subsumed	Da (Fe	
Da (Vo[∘] Fnm	subsumed	Da (Fe	
Da (Vo[∘] Fnd	subsumed	Da (Fe	
Da (Vo[∘] [	subsumed	Da (Fe	
Da (Vo[∘]]	subsumed	Da (Fe	
Da (Vo[∘] (	subsumed	Da (Fe	
Da (Vo[∘])	wait	Da ∘	4, D5
Da (Vo[∘] ←	wait	Da (	4, D5
Da (Vo[∘] ¨	subsumed	Da (Fe	
Da (Vo[∘] ∘	subsumed	Da (Fe	
Da (Vo[∘] ¨	subsumed	Da (Fe	
Da (Vo[∘] .	subsumed	Da (Fe	
Da (Vo[∘] ⁑	subsumed	Da (Fe	
Da (Vo[∘] /	subsumed	Da (Fe	
Da (Vo[∘] ≠	subsumed	Da (Fe	
Da (Vo[∘] \	subsumed	Da (Fe	
Da (Vo[∘] ↚	subsumed	Da (Fe	
Da (Vo[∘] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Da (Vo[∘] D	subsumed	Da (Fe	
Da (Vo[∘] Da	subsumed	Da (Fe	
Da (Vo[∘] M	subsumed	Da (Fe	
Da (Vo[∘] Ma	subsumed	Da (Fe	
Da (Vo[∘] Vi	subsumed	Da (Fe	
Da (Vo[∘] Vf	subsumed	Da (Fe	
Da (Vo[∘] Vo	subsumed	Da (Fe	
Da (Vo[∘] Vu	subsumed	Da (Fe	

Table 147. Source Input Enumeration: Func. Exprs., Da (Vo[¨]

Sequence	Response	Equivalent	Trace
Da (Vo[¨] E	illegal		
Da (Vo[¨] Ea	subsumed	Da (Fe	
Da (Vo[¨] Fea	illegal		
Da (Vo[¨] Feaa	illegal		
Da (Vo[¨] Fed	illegal		
Da (Vo[¨] Feda	illegal		
Da (Vo[¨] Fem	illegal		
Da (Vo[¨] Fema	illegal		
Da (Vo[¨] Feo	illegal		
Da (Vo[¨] Fn	subsumed	Da (Fe	
Da (Vo[¨] Fnm	subsumed	Da (Fe	
Da (Vo[¨] Fnd	subsumed	Da (Fe	
Da (Vo[¨] [	subsumed	Da (Fe	
Da (Vo[¨]]	subsumed	Da (Fe	
Da (Vo[¨] (	subsumed	Da (Fe	
Da (Vo[¨])	dyadic	Da ¨	4, D5
Da (Vo[¨] ←	wait	Da (	4, D5
Da (Vo[¨] ¨̃	subsumed	Da (Fe	
Da (Vo[¨] ∘	subsumed	Da (Fe	
Da (Vo[¨] ¨	subsumed	Da (Fe	
Da (Vo[¨] .	subsumed	Da (Fe	
Da (Vo[¨] ¨*	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Vo[¨] /	subsumed	Da (Fe	
Da (Vo[¨] ≠	subsumed	Da (Fe	
Da (Vo[¨] \	subsumed	Da (Fe	
Da (Vo[¨] ↚	subsumed	Da (Fe	
Da (Vo[¨] Break	Interrupt	empty, top-level	D3
Da (Vo[¨] D	subsumed	Da (Fe	
Da (Vo[¨] Da	subsumed	Da (Fe	
Da (Vo[¨] M	subsumed	Da (Fe	
Da (Vo[¨] Ma	subsumed	Da (Fe	
Da (Vo[¨] Vi	subsumed	Da (Fe	
Da (Vo[¨] Vf	subsumed	Da (Fe	
Da (Vo[¨] Vo	subsumed	Da (Fe	
Da (Vo[¨] Vu	subsumed	Da (Fe	

Table 148. Source Input Enumeration: Func. Exprs., Da (Vo[.]

Sequence	Response	Equivalent	Trace
Da (Vo[.] E	illegal		
Da (Vo[.] Ea	subsumed	Da (Fe	
Da (Vo[.] Fea	illegal		
Da (Vo[.] Feaa	illegal		
Da (Vo[.] Fed	illegal		
Da (Vo[.] Feda	illegal		
Da (Vo[.] Fem	illegal		
Da (Vo[.] Fema	illegal		
Da (Vo[.] Feo	illegal		
Da (Vo[.] Fn	subsumed	Da (Fe	
Da (Vo[.] Fnm	subsumed	Da (Fe	
Da (Vo[.] Fnd	subsumed	Da (Fe	
Da (Vo[.] [	subsumed	Da (Fe	
Da (Vo[.]]	subsumed	Da (Fe	
Da (Vo[.] (	subsumed	Da (Fe	
Da (Vo[.])	wait	Da .	4, D5
Da (Vo[.] ←	wait	Da (	4, D5

Sequence	Response	Equivalent	Trace
Da (Vo[.] ¨̃	subsumed	Da (Fe	
Da (Vo[.] ∘	subsumed	Da (Fe	
Da (Vo[.] ¨	subsumed	Da (Fe	
Da (Vo[.] .	subsumed	Da (Fe	
Da (Vo[.] ⁎̈	subsumed	Da (Fe	
Da (Vo[.] /	subsumed	Da (Fe	
Da (Vo[.] ≠	subsumed	Da (Fe	
Da (Vo[.] \	subsumed	Da (Fe	
Da (Vo[.] ↚	subsumed	Da (Fe	
Da (Vo[.] Break	Interrupt	empty, top-level	D3
Da (Vo[.] D	subsumed	Da (Fe	
Da (Vo[.] Da	subsumed	Da (Fe	
Da (Vo[.] M	subsumed	Da (Fe	
Da (Vo[.] Ma	subsumed	Da (Fe	
Da (Vo[.] Vi	subsumed	Da (Fe	
Da (Vo[.] Vf	subsumed	Da (Fe	
Da (Vo[.] Vo	subsumed	Da (Fe	
Da (Vo[.] Vu	subsumed	Da (Fe	

Table 149. Source Input Enumeration: Func. Exprs., Da (Vo[⁎̈]

Sequence	Response	Equivalent	Trace
Da (Vo[⁎̈] E	illegal		
Da (Vo[⁎̈] Ea	subsumed	Da (Fe	
Da (Vo[⁎̈] Fea	illegal		
Da (Vo[⁎̈] Feaa	illegal		
Da (Vo[⁎̈] Fed	illegal		
Da (Vo[⁎̈] Feda	illegal		
Da (Vo[⁎̈] Fem	illegal		
Da (Vo[⁎̈] Fema	illegal		
Da (Vo[⁎̈] Feo	illegal		
Da (Vo[⁎̈] Fn	subsumed	Da (Fe	
Da (Vo[⁎̈] Fnm	subsumed	Da (Fe	
Da (Vo[⁎̈] Fnd	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Vo[⁑] [	subsumed	Da (Fe	
Da (Vo[⁑]]	subsumed	Da (Fe	
Da (Vo[⁑] (	subsumed	Da (Fe	
Da (Vo[⁑])	wait	Da ⁑	4, D5
Da (Vo[⁑] ←	wait	Da (	4, D5
Da (Vo[⁑] ⁓	subsumed	Da (Fe	
Da (Vo[⁑] ∘	subsumed	Da (Fe	
Da (Vo[⁑] ¨	subsumed	Da (Fe	
Da (Vo[⁑] .	subsumed	Da (Fe	
Da (Vo[⁑] ⁑	subsumed	Da (Fe	
Da (Vo[⁑] /	subsumed	Da (Fe	
Da (Vo[⁑] ≠	subsumed	Da (Fe	
Da (Vo[⁑] \	subsumed	Da (Fe	
Da (Vo[⁑] ⍀	subsumed	Da (Fe	
Da (Vo[⁑] Break	Interrupt	empty, top-level	D3
Da (Vo[⁑] D	subsumed	Da (Fe	
Da (Vo[⁑] Da	subsumed	Da (Fe	
Da (Vo[⁑] M	subsumed	Da (Fe	
Da (Vo[⁑] Ma	subsumed	Da (Fe	
Da (Vo[⁑] Vi	subsumed	Da (Fe	
Da (Vo[⁑] Vf	subsumed	Da (Fe	
Da (Vo[⁑] Vo	subsumed	Da (Fe	
Da (Vo[⁑] Vu	subsumed	Da (Fe	

Table 150. Source Input Enumeration: Func. Exprs., Da (Vo[/ ≠]

Sequence	Response	Equivalent	Trace
Da (Vo[/ ≠] E	illegal		
Da (Vo[/ ≠] Ea	subsumed	Da (Fe	
Da (Vo[/ ≠] Fea	illegal		
Da (Vo[/ ≠] Feaa	illegal		
Da (Vo[/ ≠] Fed	illegal		
Da (Vo[/ ≠] Feda	illegal		
Da (Vo[/ ≠] Fem	illegal		

Sequence	Response	Equivalent	Trace
Da (Vo[/ ≠] Fema	illegal		
Da (Vo[/ ≠] Feo	illegal		
Da (Vo[/ ≠] Fn	subsumed	Da (Fe	
Da (Vo[/ ≠] Fnm	subsumed	Da (Fe	
Da (Vo[/ ≠] Fnd	subsumed	Da (Fe	
Da (Vo[/ ≠] [	subsumed	Da (Fe	
Da (Vo[/ ≠]]	subsumed	Da (Fe	
Da (Vo[/ ≠] (	subsumed	Da (Fe	
Da (Vo[/ ≠])	ambivalent axis	Da /	4, D5
Da (Vo[/ ≠] ←	wait	Da (	4, D5
Da (Vo[/ ≠] ⁖	subsumed	Da (Fe	
Da (Vo[/ ≠] ∘	subsumed	Da (Fe	
Da (Vo[/ ≠] ¨	subsumed	Da (Fe	
Da (Vo[/ ≠] .	subsumed	Da (Fe	
Da (Vo[/ ≠] ⁑	subsumed	Da (Fe	
Da (Vo[/ ≠] /	subsumed	Da (Fe	
Da (Vo[/ ≠] ≠	subsumed	Da (Fe	
Da (Vo[/ ≠] \	subsumed	Da (Fe	
Da (Vo[/ ≠] ⅄	subsumed	Da (Fe	
Da (Vo[/ ≠] Break	Interrupt	empty, top-level	D3
Da (Vo[/ ≠] D	subsumed	Da (Fe	
Da (Vo[/ ≠] Da	subsumed	Da (Fe	
Da (Vo[/ ≠] M	subsumed	Da (Fe	
Da (Vo[/ ≠] Ma	subsumed	Da (Fe	
Da (Vo[/ ≠] Vi	subsumed	Da (Fe	
Da (Vo[/ ≠] Vf	subsumed	Da (Fe	
Da (Vo[/ ≠] Vo	subsumed	Da (Fe	
Da (Vo[/ ≠] Vu	subsumed	Da (Fe	

Table 151. Source Input Enumeration: Func. Exprs., Da (Vo[\ ⅄]

Sequence	Response	Equivalent	Trace
Da (Vo[\ ⅄] E	illegal		
Da (Vo[\ ⅄] Ea	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Vo[\ ↚] Fea	illegal		
Da (Vo[\ ↚] Feaa	illegal		
Da (Vo[\ ↚] Fed	illegal		
Da (Vo[\ ↚] Feda	illegal		
Da (Vo[\ ↚] Fem	illegal		
Da (Vo[\ ↚] Fema	illegal		
Da (Vo[\ ↚] Feo	illegal		
Da (Vo[\ ↚] Fn	subsumed	Da (Fe	
Da (Vo[\ ↚] Fnm	subsumed	Da (Fe	
Da (Vo[\ ↚] Fnd	subsumed	Da (Fe	
Da (Vo[\ ↚] [	subsumed	Da (Fe	
Da (Vo[\ ↚]]	subsumed	Da (Fe	
Da (Vo[\ ↚] (	subsumed	Da (Fe	
Da (Vo[\ ↚])	monadic axis	Da \	4, D5
Da (Vo[\ ↚] ←	wait	Da (	4, D5
Da (Vo[\ ↚] ⍨	subsumed	Da (Fe	
Da (Vo[\ ↚] ∘	subsumed	Da (Fe	
Da (Vo[\ ↚] ¨	subsumed	Da (Fe	
Da (Vo[\ ↚] .	subsumed	Da (Fe	
Da (Vo[\ ↚] ⍣	subsumed	Da (Fe	
Da (Vo[\ ↚] /	subsumed	Da (Fe	
Da (Vo[\ ↚] ⌿	subsumed	Da (Fe	
Da (Vo[\ ↚] \	subsumed	Da (Fe	
Da (Vo[\ ↚] ↚	subsumed	Da (Fe	
Da (Vo[\ ↚] Break	Interrupt	empty, top-level	D3
Da (Vo[\ ↚] D	subsumed	Da (Fe	
Da (Vo[\ ↚] Da	subsumed	Da (Fe	
Da (Vo[\ ↚] M	subsumed	Da (Fe	
Da (Vo[\ ↚] Ma	subsumed	Da (Fe	
Da (Vo[\ ↚] Vi	subsumed	Da (Fe	
Da (Vo[\ ↚] Vf	subsumed	Da (Fe	
Da (Vo[\ ↚] Vo	subsumed	Da (Fe	
Da (Vo[\ ↚] Vu	subsumed	Da (Fe	

Table 152. Source Input Enumeration: Function Expressions, Da (Vu

Sequence	Response	Equivalent	Trace
Da (Vu E	illegal		
Da (Vu Ea	subsumed	Da (Fe	
Da (Vu Fea	illegal		
Da (Vu Feaa	illegal		
Da (Vu Fed	illegal		
Da (Vu Feda	illegal		
Da (Vu Fem	illegal		
Da (Vu Fema	illegal		
Da (Vu Feo	illegal		
Da (Vu Fn	subsumed	Da (Fe	
Da (Vu Fnm	subsumed	Da (Fe	
Da (Vu Fnd	subsumed	Da (Fe	
Da (Vu [	subsumed	Da (Fe	
Da (Vu]	subsumed	Da (Fe	
Da (Vu (	subsumed	Da (Fe	
Da (Vu)	Value Error	empty	4, 10
Da (Vu ←	wait	Da (	4
Da (Vu ⁖	subsumed	Da (Fe	
Da (Vu ∘	subsumed	Da (Fe	
Da (Vu ¨	subsumed	Da (Fe	
Da (Vu .	subsumed	Da (Fe	
Da (Vu ⍣	subsumed	Da (Fe	
Da (Vu /	subsumed	Da (Fe	
Da (Vu ⌿	subsumed	Da (Fe	
Da (Vu \	subsumed	Da (Fe	
Da (Vu ⍀	subsumed	Da (Fe	
Da (Vu Break	Interrupt	empty, top-level	D3
Da (Vu D	subsumed	Da (Fe	
Da (Vu Da	subsumed	Da (Fe	
Da (Vu M	subsumed	Da (Fe	
Da (Vu Ma	subsumed	Da (Fe	
Da (Vu Vi	subsumed	Da (Fe	

Sequence	Response	Equivalent	Trace
Da (Vu Vf	subsumed	Da (Fe	
Da (Vu Vo	subsumed	Da (Fe	
Da (Vu Vu	subsumed	Da (Fe	

Table 153. Source Input Enumeration: Function Expressions, Da ∘ (

Sequence	Response	Equivalent	Trace
Da ∘ (E	illegal		
Da ∘ (Ea	Syntax Error	empty	4, 10
Da ∘ (Fea	wait		4
Da ∘ (Feaa	wait	Da ∘ (Fea	4
Da ∘ (Fed	Syntax Error	empty	4, 10
Da ∘ (Feda	Syntax Error	empty	4, 10
Da ∘ (Fem	wait	Da ∘ (Fea	4
Da ∘ (Fema	wait	Da ∘ (Fem	4
Da ∘ (Feo	Syntax Error	empty	4, 10
Da ∘ (Fn	subsumed	Da ∘ (Fe	
Da ∘ (Fnm	subsumed	Da ∘ (Fe	
Da ∘ (Fnd	subsumed	Da ∘ (Fe	
Da ∘ ([	subsumed	Da ∘ (Fe	
Da ∘ ( ]	subsumed	Da ∘ (Fe	
Da ∘ ((	subsumed	Da ∘ (Fe	
Da ∘ ( )	Syntax Error	empty	4, 10
Da ∘ (←	subsumed	Da ∘ (Fe	
Da ∘ (¨	subsumed	Da ∘ (Fe	
Da ∘ (∘	subsumed	Da ∘ (Fe	
Da ∘ (¨	subsumed	Da ∘ (Fe	
Da ∘ (.	subsumed	Da ∘ (Fe	
Da ∘ (⍣	subsumed	Da ∘ (Fe	
Da ∘ (/	subsumed	Da ∘ (Fe	
Da ∘ (≠	subsumed	Da ∘ (Fe	
Da ∘ (\	subsumed	Da ∘ (Fe	
Da ∘ (⍀	subsumed	Da ∘ (Fe	
Da ∘ (Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Da ∘ (D	subsumed	Da ∘ (Fe	
Da ∘ (Da	subsumed	Da ∘ (Fe	
Da ∘ (M	subsumed	Da ∘ (Fe	
Da ∘ (Ma	subsumed	Da ∘ (Fe	
Da ∘ (Vi	subsumed	Da ∘ (Fe	
Da ∘ (Vf	wait		4
Da ∘ (Vo	wait		4
Da ∘ (Vu	wait		4

Table 154. Source Input Enumeration: Function Expressions, Da ⁑ (

Sequence	Response	Equivalent	Trace
Da ⁑ (E	illegal		
Da ⁑ (Ea	Syntax Error	empty	4, 10
Da ⁑ (Fea	wait		4
Da ⁑ (Feaa	wait	Da ⁑ (Fea	4
Da ⁑ (Fed	wait	Da ⁑ (Fea	4
Da ⁑ (Feda	wait	Da ⁑ (Fed	4
Da ⁑ (Fem	Syntax Error	empty	4, 10
Da ⁑ (Fema	Syntax Error	empty	4, 10
Da ⁑ (Feo	Syntax Error	empty	4, 10
Da ⁑ (Fn	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fnm	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fnd	subsumed	Da ⁑ (Fe	4
Da ⁑ ([	subsumed	Da ⁑ (Fe	4
Da ⁑ ( ]	subsumed	Da ⁑ (Fe	4
Da ⁑ ((	subsumed	Da ⁑ (Fe	4
Da ⁑ ( )	Syntax Error	empty	4, 10
Da ⁑ (←	subsumed	Da ⁑ (Fe	4
Da ⁑ (⁐	subsumed	Da ⁑ (Fe	4
Da ⁑ (∘	subsumed	Da ⁑ (Fe	4
Da ⁑ (¨	subsumed	Da ⁑ (Fe	4
Da ⁑ (.	subsumed	Da ⁑ (Fe	4
Da ⁑ (⁑	subsumed	Da ⁑ (Fe	4

Sequence	Response	Equivalent	Trace
Da ⁑ (/	subsumed	Da ⁑ (Fe	4
Da ⁑ (⁄	subsumed	Da ⁑ (Fe	4
Da ⁑ (\	subsumed	Da ⁑ (Fe	4
Da ⁑ (↚	subsumed	Da ⁑ (Fe	4
Da ⁑ (Break	Interrupt	empty, top-level	D3
Da ⁑ (D	subsumed	Da ⁑ (Fe	4
Da ⁑ (Da	subsumed	Da ⁑ (Fe	4
Da ⁑ (M	subsumed	Da ⁑ (Fe	4
Da ⁑ (Ma	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vi	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf	wait		4
Da ⁑ (Vo	wait		4
Da ⁑ (Vu	wait		4

Table 155. Source Input Enumeration: Func. Exprs., Ea Fnd (Fea

Sequence	Response	Equivalent	Trace
Ea Fnd (Fea E	illegal		
Ea Fnd (Fea Ea	subsumed	Ea Fnd (Fe	4
Ea Fnd (Fea Fea	illegal		
Ea Fnd (Fea Feaa	illegal		
Ea Fnd (Fea Fed	illegal		
Ea Fnd (Fea Feda	illegal		
Ea Fnd (Fea Fem	illegal		
Ea Fnd (Fea Fema	illegal		
Ea Fnd (Fea Feo	illegal		
Ea Fnd (Fea Fn	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Fnm	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Fnd	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea [	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea]	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea (	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea)	ambivalent	Ea Fnd Ea	4
Ea Fnd (Fea ←	subsumed	Ea Fnd (Fe	

Sequence	Response	Equivalent	Trace
Ea Fnd (Fea ⁖	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea ∘	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea ¨	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea .	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea ⁑	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea /	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea ⁄	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea \	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea ⧵	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Break	Interrupt	empty, top-level	D3
Ea Fnd (Fea D	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Da	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea M	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Ma	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Vi	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Vf	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Vo	subsumed	Ea Fnd (Fe	
Ea Fnd (Fea Vu	subsumed	Ea Fnd (Fe	

Table 156. Source Input Enumeration: Func. Exprs., Ea Fnd (Vf

Sequence	Response	Equivalent	Trace
Ea Fnd (Vf E	illegal		
Ea Fnd (Vf Ea	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Fea	illegal		
Ea Fnd (Vf Feaa	illegal		
Ea Fnd (Vf Fed	illegal		
Ea Fnd (Vf Feda	illegal		
Ea Fnd (Vf Fem	illegal		
Ea Fnd (Vf Fema	illegal		
Ea Fnd (Vf Feo	illegal		
Ea Fnd (Vf Fn	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Fnm	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Fnd	subsumed	Ea Fnd (Fe	

Sequence	Response	Equivalent	Trace
Ea Fnd (Vf [	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf]	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf (	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf)	ambivalent	Ea Fnd Vf	4
Ea Fnd (Vf ←	wait	Ea Fnd (	4
Ea Fnd (Vf ˜	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf ∘	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf ¨	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf .	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf ⁑	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf /	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf ⁄	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf \	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf ∖	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Break	Interrupt	empty, top-level	D3
Ea Fnd (Vf D	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Da	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf M	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Ma	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Vi	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Vf	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Vo	subsumed	Ea Fnd (Fe	
Ea Fnd (Vf Vu	subsumed	Ea Fnd (Fe	

Table 157. Source Input Enumeration: Func. Exprs., Ea Fnd (Vo

Sequence	Response	Equivalent	Trace
Ea Fnd (Vo E	illegal		
Ea Fnd (Vo Ea	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Fea	illegal		
Ea Fnd (Vo Feaa	illegal		
Ea Fnd (Vo Fed	illegal		
Ea Fnd (Vo Feda	illegal		
Ea Fnd (Vo Fem	illegal		

Sequence	Response	Equivalent	Trace
Ea Fnd (Vo Fema	illegal		
Ea Fnd (Vo Feo	illegal		
Ea Fnd (Vo Fn	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Fnm	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Fnd	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo [	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo]	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo (	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo)	Syntax Error	empty	4, 10
Ea Fnd (Vo ←	wait	Ea Fnd (	4
Ea Fnd (Vo ˷	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo ∘	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo ¨	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo .	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo ⍣	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo /	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo ⌿	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo \	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo ⍀	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Break	Interrupt	empty, top-level	D3
Ea Fnd (Vo D	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Da	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo M	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Ma	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Vi	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Vf	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Vo	subsumed	Ea Fnd (Fe	
Ea Fnd (Vo Vu	subsumed	Ea Fnd (Fe	

Table 158. Source Input Enumeration: Func. Exprs., Ea Fnd (Vu

Sequence	Response	Equivalent	Trace
Ea Fnd (Vu E	illegal		
Ea Fnd (Vu Ea	subsumed	Ea Fnd (Fe	

Sequence	Response	Equivalent	Trace
Ea Fnd (Vu Fea	illegal		
Ea Fnd (Vu Feaa	illegal		
Ea Fnd (Vu Fed	illegal		
Ea Fnd (Vu Feda	illegal		
Ea Fnd (Vu Fem	illegal		
Ea Fnd (Vu Fema	illegal		
Ea Fnd (Vu Feo	illegal		
Ea Fnd (Vu Fn	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Fnm	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Fnd	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu [	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu]	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu (	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu)	Value Error	empty	4, 10
Ea Fnd (Vu ←	wait	Ea Fnd (	4
Ea Fnd (Vu ˜	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu ∘	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu ¨	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu .	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu ⁎	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu /	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu ≠	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu \	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu ∤	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Break	Interrupt	empty, top-level	D3
Ea Fnd (Vu D	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Da	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu M	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Ma	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Vi	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Vf	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Vo	subsumed	Ea Fnd (Fe	
Ea Fnd (Vu Vu	subsumed	Ea Fnd (Fe	

Table 159. Source Input Enumeration: Function Expressions, Ea ∘ (Fea

Sequence	Response	Equivalent	Trace
Ea ∘ (Fea E	illegal		
Ea ∘ (Fea Ea	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Fea	illegal		
Ea ∘ (Fea Feaa	illegal		
Ea ∘ (Fea Fed	illegal		
Ea ∘ (Fea Feda	illegal		
Ea ∘ (Fea Fem	illegal		
Ea ∘ (Fea Fema	illegal		
Ea ∘ (Fea Feo	illegal		
Ea ∘ (Fea Fn	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Fnm	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Fnd	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea [	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea]	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea (	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea)	monadic	Ea ∘ Fn	4
Ea ∘ (Fea ←	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea ¨	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea ∘	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea ¨	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea .	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea ⍣	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea /	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea ⌿	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea \	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea ⍀	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Break	Interrupt	empty, top-level	D3
Ea ∘ (Fea D	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Da	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea M	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Ma	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Vi	subsumed	Ea ∘ (Fe	

Sequence	Response	Equivalent	Trace
Ea ∘ (Fea Vf	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Vo	subsumed	Ea ∘ (Fe	
Ea ∘ (Fea Vu	subsumed	Ea ∘ (Fe	

Table 160. Source Input Enumeration: Function Expressions, Ea ∘ (Vf

Sequence	Response	Equivalent	Trace
Ea ∘ (Vf E	illegal		
Ea ∘ (Vf Ea	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Fea	illegal		
Ea ∘ (Vf Feaa	illegal		
Ea ∘ (Vf Fed	illegal		
Ea ∘ (Vf Feda	illegal		
Ea ∘ (Vf Fem	illegal		
Ea ∘ (Vf Fema	illegal		
Ea ∘ (Vf Feo	illegal		
Ea ∘ (Vf Fn	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Fnm	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Fnd	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf [	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf]	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf (	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf)	monadic	Ea ∘ Vf	4
Ea ∘ (Vf ←	wait	Ea ∘ (	4
Ea ∘ (Vf ¨	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf ∘	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf ¨	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf .	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf ⍣	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf /	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf ⌿	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf \	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf ⍀	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Ea ∘ (Vf D	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Da	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf M	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Ma	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Vi	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Vf	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Vo	subsumed	Ea ∘ (Fe	
Ea ∘ (Vf Vu	subsumed	Ea ∘ (Fe	

Table 161. Source Input Enumeration: Function Expressions, Ea ∘ (Vo

Sequence	Response	Equivalent	Trace
Ea ∘ (Vo E	illegal		
Ea ∘ (Vo Ea	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Fea	illegal		
Ea ∘ (Vo Feaa	illegal		
Ea ∘ (Vo Fed	illegal		
Ea ∘ (Vo Feda	illegal		
Ea ∘ (Vo Fem	illegal		
Ea ∘ (Vo Fema	illegal		
Ea ∘ (Vo Feo	illegal		
Ea ∘ (Vo Fn	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Fnm	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Fnd	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo [	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo]	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo (	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo)	Syntax Error	empty	4, 10
Ea ∘ (Vo ←	wait	Ea ∘ (	4
Ea ∘ (Vo ⁖	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo ∘	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo ¨	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo .	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo ⁘	subsumed	Ea ∘ (Fe	

Sequence	Response	Equivalent	Trace
Ea ∘ (Vo /	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo ⁄	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo \	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo ⧵	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Break	Interrupt	empty, top-level	D3
Ea ∘ (Vo D	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Da	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo M	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Ma	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Vi	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Vf	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Vo	subsumed	Ea ∘ (Fe	
Ea ∘ (Vo Vu	subsumed	Ea ∘ (Fe	

Table 162. Source Input Enumeration: Function Expressions, Ea ∘ (Vu

Sequence	Response	Equivalent	Trace
Ea ∘ (Vu E	illegal		
Ea ∘ (Vu Ea	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Fea	illegal		
Ea ∘ (Vu Feaa	illegal		
Ea ∘ (Vu Fed	illegal		
Ea ∘ (Vu Feda	illegal		
Ea ∘ (Vu Fem	illegal		
Ea ∘ (Vu Fema	illegal		
Ea ∘ (Vu Feo	illegal		
Ea ∘ (Vu Fn	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Fnm	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Fnd	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu [	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu]	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu (	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu)	Value Error	empty	4, 10
Ea ∘ (Vu ←	wait	Ea ∘ (	4

Sequence	Response	Equivalent	Trace
Ea ∘ (Vu ⁖	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu ∘	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu ⁘	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu .	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu ⁙	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu /	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu ⁄	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu \	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu ⅂	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Break	Interrupt	empty, top-level	D3
Ea ∘ (Vu D	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Da	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu M	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Ma	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Vi	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Vf	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Vo	subsumed	Ea ∘ (Fe	
Ea ∘ (Vu Vu	subsumed	Ea ∘ (Fe	

Table 163. Source Input Enumeration: Function Expressions, Fn ∘ (Fea

Sequence	Response	Equivalent	Trace
Fn ∘ (Fea E	illegal		
Fn ∘ (Fea Ea	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Fea	illegal		
Fn ∘ (Fea Feaa	illegal		
Fn ∘ (Fea Fed	illegal		
Fn ∘ (Fea Feda	illegal		
Fn ∘ (Fea Fem	illegal		
Fn ∘ (Fea Fema	illegal		
Fn ∘ (Fea Feo	illegal		
Fn ∘ (Fea Fn	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Fnm	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Fnd	subsumed	Fn ∘ (Fea	

Sequence	Response	Equivalent	Trace
Fn ∘ (Fea [	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea]	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea (	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea)	ambivalent	Fn ∘ Fn	4
Fn ∘ (Fea ←	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea ⁖	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea ∘	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea ¨	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea .	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea ⁑	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea /	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea ≠	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea \	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea ↚	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Break	Interrupt	empty, top-level	D3
Fn ∘ (Fea D	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Da	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea M	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Ma	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Vi	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Vf	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Vo	subsumed	Fn ∘ (Fea	
Fn ∘ (Fea Vu	subsumed	Fn ∘ (Fea	

Table 164. Source Input Enumeration: Function Expressions, Fn ∘ (Vf

Sequence	Response	Equivalent	Trace
Fn ∘ (Vf E	illegal		
Fn ∘ (Vf Ea	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Fea	illegal		
Fn ∘ (Vf Feaa	illegal		
Fn ∘ (Vf Fed	illegal		
Fn ∘ (Vf Feda	illegal		
Fn ∘ (Vf Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn ∘ (Vf Fema	illegal		
Fn ∘ (Vf Feo	illegal		
Fn ∘ (Vf Fn	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Fnm	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Fnd	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf [	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf]	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf (	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf)	ambivalent	Fn ∘ Vf	4
Fn ∘ (Vf ←	wait	Fn ∘ (	4
Fn ∘ (Vf ⁖	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf ∘	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf ¨	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf .	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf ⁑	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf /	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf ≠	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf \	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf ⅄	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Break	Interrupt	empty, top-level	D3
Fn ∘ (Vf D	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Da	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf M	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Ma	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Vi	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Vf	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Vo	subsumed	Fn ∘ (Fea	
Fn ∘ (Vf Vu	subsumed	Fn ∘ (Fea	

Table 165. Source Input Enumeration: Function Expressions, Fn ∘ (Vo

Sequence	Response	Equivalent	Trace
Fn ∘ (Vo E	illegal		
Fn ∘ (Vo Ea	subsumed	Fn ∘ (Fea	

Sequence	Response	Equivalent	Trace
Fn ∘ (Vo Fea	illegal		
Fn ∘ (Vo Feaa	illegal		
Fn ∘ (Vo Fed	illegal		
Fn ∘ (Vo Feda	illegal		
Fn ∘ (Vo Fem	illegal		
Fn ∘ (Vo Fema	illegal		
Fn ∘ (Vo Feo	illegal		
Fn ∘ (Vo Fn	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Fnm	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Fnd	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo [	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo]	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo (	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo)	Syntax Error	empty	4, 10
Fn ∘ (Vo ←	wait	Fn ∘ (	4
Fn ∘ (Vo ⁖	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo ∘	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo ¨	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo .	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo ⁑	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo /	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo ≠	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo \	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo ↚	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Break	Interrupt	empty, top-level	D3
Fn ∘ (Vo D	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Da	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo M	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Ma	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Vi	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Vf	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Vo	subsumed	Fn ∘ (Fea	
Fn ∘ (Vo Vu	subsumed	Fn ∘ (Fea	

Table 166. Source Input Enumeration: Function Expressions, Fn ∘ (Vu

Sequence	Response	Equivalent	Trace
Fn ∘ (Vu E	illegal		
Fn ∘ (Vu Ea	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Fea	illegal		
Fn ∘ (Vu Feaa	illegal		
Fn ∘ (Vu Fed	illegal		
Fn ∘ (Vu Feda	illegal		
Fn ∘ (Vu Fem	illegal		
Fn ∘ (Vu Fema	illegal		
Fn ∘ (Vu Feo	illegal		
Fn ∘ (Vu Fn	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Fnm	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Fnd	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu [	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu]	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu (	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu)	Value Error	empty	4, 10
Fn ∘ (Vu ←	wait	Fn ∘ (	4
Fn ∘ (Vu ⁖	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu ∘	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu ¨	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu .	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu ⁑	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu /	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu ≠	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu \	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu ↚	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Break	Interrupt	empty, top-level	D3
Fn ∘ (Vu D	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Da	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu M	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Ma	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Vi	subsumed	Fn ∘ (Fea	

Sequence	Response	Equivalent	Trace
Fn ∘ (Vu Vf	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Vo	subsumed	Fn ∘ (Fea	
Fn ∘ (Vu Vu	subsumed	Fn ∘ (Fea	

Table 167. Source Input Enumeration: Function Expressions, Fn . (Fea

Sequence	Response	Equivalent	Trace
Fn . (Fea E	illegal		
Fn . (Fea Ea	Value Error	empty	4, 10
Fn . (Fea Fea	illegal		
Fn . (Fea Feaa	illegal		
Fn . (Fea Fed	illegal		
Fn . (Fea Feda	illegal		
Fn . (Fea Fem	illegal		
Fn . (Fea Fema	illegal		
Fn . (Fea Feo	illegal		
Fn . (Fea Fn	subsumed	Fn . (Fe	
Fn . (Fea Fnm	subsumed	Fn . (Fe	
Fn . (Fea Fnd	subsumed	Fn . (Fe	
Fn . (Fea [	subsumed	Fn . (Fe	
Fn . (Fea]	subsumed	Fn . (Fe	
Fn . (Fea (	subsumed	Fn . (Fe	
Fn . (Fea)	dyadic	Fn . Fn	4
Fn . (Fea ←	subsumed	Fn . (Fe	
Fn . (Fea ¨	subsumed	Fn . (Fe	
Fn . (Fea ∘	subsumed	Fn . (Fe	
Fn . (Fea ¨	subsumed	Fn . (Fe	
Fn . (Fea .	subsumed	Fn . (Fe	
Fn . (Fea ⍣	subsumed	Fn . (Fe	
Fn . (Fea /	subsumed	Fn . (Fe	
Fn . (Fea ≠	subsumed	Fn . (Fe	
Fn . (Fea \	subsumed	Fn . (Fe	
Fn . (Fea ⍀	subsumed	Fn . (Fe	
Fn . (Fea Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn . (Fea D	subsumed	Fn . (Fe	
Fn . (Fea Da	subsumed	Fn . (Fe	
Fn . (Fea M	subsumed	Fn . (Fe	
Fn . (Fea Ma	subsumed	Fn . (Fe	
Fn . (Fea Vi	Value Error	empty	4, 10
Fn . (Fea Vf	Value Error	empty	4, 10
Fn . (Fea Vo	Value Error	empty	4, 10
Fn . (Fea Vu	Value Error	empty	4, 10

Table 168. Source Input Enumeration: Function Expressions, Fn . (Vf

Sequence	Response	Equivalent	Trace
Fn . (Vf E	illegal		
Fn . (Vf Ea	Value Error	empty	4, 10
Fn . (Vf Fea	illegal		
Fn . (Vf Feaa	illegal		
Fn . (Vf Fed	illegal		
Fn . (Vf Feda	illegal		
Fn . (Vf Fem	illegal		
Fn . (Vf Fema	illegal		
Fn . (Vf Feo	illegal		
Fn . (Vf Fn	subsumed	Fn . (Fe	
Fn . (Vf Fnm	subsumed	Fn . (Fe	
Fn . (Vf Fnd	subsumed	Fn . (Fe	
Fn . (Vf [	subsumed	Fn . (Fe	
Fn . (Vf]	subsumed	Fn . (Fe	
Fn . (Vf (	subsumed	Fn . (Fe	
Fn . (Vf)	dyadic	Fn . Vf	4
Fn . (Vf ←	wait	Fn . (	4
Fn . (Vf ⍨	subsumed	Fn . (Fe	
Fn . (Vf ∘	subsumed	Fn . (Fe	
Fn . (Vf ⍤	subsumed	Fn . (Fe	
Fn . (Vf .	subsumed	Fn . (Fe	
Fn . (Vf ⍣	subsumed	Fn . (Fe	

Sequence	Response	Equivalent	Trace
Fn . (Vf /	subsumed	Fn . (Fe	
Fn . (Vf ≠	subsumed	Fn . (Fe	
Fn . (Vf \	subsumed	Fn . (Fe	
Fn . (Vf ↚	subsumed	Fn . (Fe	
Fn . (Vf Break	Interrupt	empty, top-level	D3
Fn . (Vf D	subsumed	Fn . (Fe	
Fn . (Vf Da	subsumed	Fn . (Fe	
Fn . (Vf M	subsumed	Fn . (Fe	
Fn . (Vf Ma	subsumed	Fn . (Fe	
Fn . (Vf Vi	Value Error	empty	4, 10
Fn . (Vf Vf	Value Error	empty	4, 10
Fn . (Vf Vo	Value Error	empty	4, 10
Fn . (Vf Vu	Value Error	empty	4, 10

Table 169. Source Input Enumeration: Function Expressions, Fn . (Vo

Sequence	Response	Equivalent	Trace
Fn . (Vo E	illegal		
Fn . (Vo Ea	Value Error	empty	4, 10
Fn . (Vo Fea	illegal		
Fn . (Vo Feaa	illegal		
Fn . (Vo Fed	illegal		
Fn . (Vo Feda	illegal		
Fn . (Vo Fem	illegal		
Fn . (Vo Fema	illegal		
Fn . (Vo Feo	illegal		
Fn . (Vo Fn	subsumed	Fn . (Fe	
Fn . (Vo Fnm	subsumed	Fn . (Fe	
Fn . (Vo Fnd	subsumed	Fn . (Fe	
Fn . (Vo [	subsumed	Fn . (Fe	
Fn . (Vo]	subsumed	Fn . (Fe	
Fn . (Vo (	subsumed	Fn . (Fe	
Fn . (Vo)	Syntax Error	empty	4, 10
Fn . (Vo ←	wait	Fn . (	4

Sequence	Response	Equivalent	Trace
Fn . (Vo ⁖	subsumed	Fn . (Fe	
Fn . (Vo ∘	subsumed	Fn . (Fe	
Fn . (Vo ¨	subsumed	Fn . (Fe	
Fn . (Vo .	subsumed	Fn . (Fe	
Fn . (Vo ⁑	subsumed	Fn . (Fe	
Fn . (Vo /	subsumed	Fn . (Fe	
Fn . (Vo ≠	subsumed	Fn . (Fe	
Fn . (Vo \	subsumed	Fn . (Fe	
Fn . (Vo ↚	subsumed	Fn . (Fe	
Fn . (Vo Break	Interrupt	empty, top-level	D3
Fn . (Vo D	subsumed	Fn . (Fe	
Fn . (Vo Da	subsumed	Fn . (Fe	
Fn . (Vo M	subsumed	Fn . (Fe	
Fn . (Vo Ma	subsumed	Fn . (Fe	
Fn . (Vo Vi	Value Error	empty	4, 10
Fn . (Vo Vf	Value Error	empty	4, 10
Fn . (Vo Vo	Value Error	empty	4, 10
Fn . (Vo Vu	Value Error	empty	4, 10

Table 170. Source Input Enumeration: Function Expressions, Fn . (Vu

Sequence	Response	Equivalent	Trace
Fn . (Vu E	illegal		
Fn . (Vu Ea	Value Error	empty	4, 10
Fn . (Vu Fea	illegal		
Fn . (Vu Feaa	illegal		
Fn . (Vu Fed	illegal		
Fn . (Vu Feda	illegal		
Fn . (Vu Fem	illegal		
Fn . (Vu Fema	illegal		
Fn . (Vu Feo	illegal		
Fn . (Vu Fn	subsumed	Fn . (Fe	
Fn . (Vu Fnm	subsumed	Fn . (Fe	
Fn . (Vu Fnd	subsumed	Fn . (Fe	

Sequence	Response	Equivalent	Trace
Fn . (Vu [	subsumed	Fn . (Fe	
Fn . (Vu]	subsumed	Fn . (Fe	
Fn . (Vu (	subsumed	Fn . (Fe	
Fn . (Vu)	Value Error	empty	4, 10
Fn . (Vu ←	wait	Fn . (	4
Fn . (Vu ⁖	subsumed	Fn . (Fe	
Fn . (Vu ∘	subsumed	Fn . (Fe	
Fn . (Vu ¨	subsumed	Fn . (Fe	
Fn . (Vu .	subsumed	Fn . (Fe	
Fn . (Vu ⁑	subsumed	Fn . (Fe	
Fn . (Vu /	subsumed	Fn . (Fe	
Fn . (Vu ≠	subsumed	Fn . (Fe	
Fn . (Vu \	subsumed	Fn . (Fe	
Fn . (Vu ↚	subsumed	Fn . (Fe	
Fn . (Vu Break	Interrupt	empty, top-level	D3
Fn . (Vu D	subsumed	Fn . (Fe	
Fn . (Vu Da	subsumed	Fn . (Fe	
Fn . (Vu M	subsumed	Fn . (Fe	
Fn . (Vu Ma	subsumed	Fn . (Fe	
Fn . (Vu Vi	Value Error	empty	4, 10
Fn . (Vu Vf	Value Error	empty	4, 10
Fn . (Vu Vo	Value Error	empty	4, 10
Fn . (Vu Vu	Value Error	empty	4, 10

Table 171. Source Input Enumeration: Function Expressions, Fn \ [E

Sequence	Response	Equivalent	Trace
Fn \ [E E	illegal		
Fn \ [E Ea	subsumed	Fn \ [E	
Fn \ [E Fea	illegal		
Fn \ [E Feaa	illegal		
Fn \ [E Fed	illegal		
Fn \ [E Feda	illegal		
Fn \ [E Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn \ [E Fema	illegal		
Fn \ [E Feo	illegal		
Fn \ [E Fn	subsumed	Fn \ [E	
Fn \ [E Fnm	subsumed	Fn \ [E	
Fn \ [E Fnd	subsumed	Fn \ [E	
Fn \ [E [	subsumed	Fn \ [E	
Fn \ [E]	monadic	Ea ∘ Fn	4
Fn \ [E (	subsumed	Fn \ [E	
Fn \ [E)	subsumed	Fn \ [E	
Fn \ [E ←	subsumed	Fn \ [E	
Fn \ [E ¨	subsumed	Fn \ [E	
Fn \ [E ∘	subsumed	Fn \ [E	
Fn \ [E ¨	subsumed	Fn \ [E	
Fn \ [E .	subsumed	Fn \ [E	
Fn \ [E ⍣	subsumed	Fn \ [E	
Fn \ [E /	subsumed	Fn \ [E	
Fn \ [E ⌿	subsumed	Fn \ [E	
Fn \ [E \	subsumed	Fn \ [E	
Fn \ [E ⍀	subsumed	Fn \ [E	
Fn \ [E Break	Interrupt	empty, top-level	D3
Fn \ [E D	subsumed	Fn \ [E	
Fn \ [E Da	subsumed	Fn \ [E	
Fn \ [E M	subsumed	Fn \ [E	
Fn \ [E Ma	subsumed	Fn \ [E	
Fn \ [E Vi	subsumed	Fn \ [E	
Fn \ [E Vf	subsumed	Fn \ [E	
Fn \ [E Vo	subsumed	Fn \ [E	
Fn \ [E Vu	subsumed	Fn \ [E	

Table 172. Source Input Enumeration: Func. Exprs., Fn \ (Feo[∘]

Sequence	Response	Equivalent	Trace
Fn \ (Feo[∘] E	illegal		
Fn \ (Feo[∘] Ea	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Feo[∘] Fea	illegal		
Fn \ (Feo[∘] Feaa	illegal		
Fn \ (Feo[∘] Fed	illegal		
Fn \ (Feo[∘] Feda	illegal		
Fn \ (Feo[∘] Fem	illegal		
Fn \ (Feo[∘] Fema	illegal		
Fn \ (Feo[∘] Feo	illegal		
Fn \ (Feo[∘] Fn	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Fnm	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Fnd	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] [	subsumed	Fn \ (Fe	
Fn \ (Feo[∘]]	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] (	subsumed	Fn \ (Fe	
Fn \ (Feo[∘])	wait	Fn \ ∘	4
Fn \ (Feo[∘] ←	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] ⁖	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] ∘	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] ¨	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] .	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] ⁑	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] /	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] ≠	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] \	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] ↚	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Break	Interrupt	empty, top-level	D3
Fn \ (Feo[∘] D	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Da	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] M	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Ma	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Vi	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Vf	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Vo	subsumed	Fn \ (Fe	
Fn \ (Feo[∘] Vu	subsumed	Fn \ (Fe	

Table 173. Source Input Enumeration: Func. Exprs., Fn \ (Feo[¨]

Sequence	Response	Equivalent	Trace
Fn \ (Feo[¨] E	illegal		
Fn \ (Feo[¨] Ea	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Fea	illegal		
Fn \ (Feo[¨] Feaa	illegal		
Fn \ (Feo[¨] Fed	illegal		
Fn \ (Feo[¨] Feda	illegal		
Fn \ (Feo[¨] Fem	illegal		
Fn \ (Feo[¨] Fema	illegal		
Fn \ (Feo[¨] Feo	illegal		
Fn \ (Feo[¨] Fn	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Fnm	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Fnd	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] [	subsumed	Fn \ (Fe	
Fn \ (Feo[¨]]	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] (	subsumed	Fn \ (Fe	
Fn \ (Feo[¨])	monadic	Fn \ ¨	4
Fn \ (Feo[¨] ←	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] ¯	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] ∘	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] ¨	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] .	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] ⍣	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] /	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] ⌿	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] \	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] ⍀	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Break	Interrupt	empty, top-level	D3
Fn \ (Feo[¨] D	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Da	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] M	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Ma	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Vi	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Feo[¨] Vf	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Vo	subsumed	Fn \ (Fe	
Fn \ (Feo[¨] Vu	subsumed	Fn \ (Fe	

Table 174. Source Input Enumeration: Func. Exprs., Fn \ (Feo[⁑]

Sequence	Response	Equivalent	Trace
Fn \ (Feo[⁑] E	illegal		
Fn \ (Feo[⁑] Ea	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Fea	illegal		
Fn \ (Feo[⁑] Feaa	illegal		
Fn \ (Feo[⁑] Fed	illegal		
Fn \ (Feo[⁑] Feda	illegal		
Fn \ (Feo[⁑] Fem	illegal		
Fn \ (Feo[⁑] Fema	illegal		
Fn \ (Feo[⁑] Feo	illegal		
Fn \ (Feo[⁑] Fn	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Fnm	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Fnd	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] [	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑]]	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] (	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑])	wait	Fn \ ⁑	4
Fn \ (Feo[⁑] ←	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] ⁓	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] ∘	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] ¨	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] .	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] ⁑	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] /	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] ≠	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] \	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] ↚	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn \ (Feo[⁑] D	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Da	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] M	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Ma	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Vi	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Vf	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Vo	subsumed	Fn \ (Fe	
Fn \ (Feo[⁑] Vu	subsumed	Fn \ (Fe	

Table 175. Source Input Enumeration: Function Expressions, Fn \ (Vf

Sequence	Response	Equivalent	Trace
Fn \ (Vf E	illegal		
Fn \ (Vf Ea	subsumed	Fn \ (Fe	
Fn \ (Vf Fea	illegal		
Fn \ (Vf Feaa	illegal		
Fn \ (Vf Fed	illegal		
Fn \ (Vf Feda	illegal		
Fn \ (Vf Fem	illegal		
Fn \ (Vf Fema	illegal		
Fn \ (Vf Feo	illegal		
Fn \ (Vf Fn	subsumed	Fn \ (Fe	
Fn \ (Vf Fnm	subsumed	Fn \ (Fe	
Fn \ (Vf Fnd	subsumed	Fn \ (Fe	
Fn \ (Vf [	subsumed	Fn \ (Fe	
Fn \ (Vf]	subsumed	Fn \ (Fe	
Fn \ (Vf (	subsumed	Fn \ (Fe	
Fn \ (Vf)	Syntax Error	empty	4, 10
Fn \ (Vf ←	wait	Fn \ (	4
Fn \ (Vf ⁏	subsumed	Fn \ (Fe	
Fn \ (Vf ∘	subsumed	Fn \ (Fe	
Fn \ (Vf ¨	subsumed	Fn \ (Fe	
Fn \ (Vf .	subsumed	Fn \ (Fe	
Fn \ (Vf ⁑	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Vf /	subsumed	Fn \ (Fe	
Fn \ (Vf ≠	subsumed	Fn \ (Fe	
Fn \ (Vf \	subsumed	Fn \ (Fe	
Fn \ (Vf ↚	subsumed	Fn \ (Fe	
Fn \ (Vf Break	Interrupt	empty, top-level	D3
Fn \ (Vf D	subsumed	Fn \ (Fe	
Fn \ (Vf Da	subsumed	Fn \ (Fe	
Fn \ (Vf M	subsumed	Fn \ (Fe	
Fn \ (Vf Ma	subsumed	Fn \ (Fe	
Fn \ (Vf Vi	subsumed	Fn \ (Fe	
Fn \ (Vf Vf	subsumed	Fn \ (Fe	
Fn \ (Vf Vo	subsumed	Fn \ (Fe	
Fn \ (Vf Vu	subsumed	Fn \ (Fe	

Table 176. Source Input Enumeration: Func. Exprs., Fn \ (Vo[Fnm]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[Fnm] E	illegal		
Fn \ (Vo[Fnm] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Fea	illegal		
Fn \ (Vo[Fnm] Feaa	illegal		
Fn \ (Vo[Fnm] Fed	illegal		
Fn \ (Vo[Fnm] Feda	illegal		
Fn \ (Vo[Fnm] Fem	illegal		
Fn \ (Vo[Fnm] Fema	illegal		
Fn \ (Vo[Fnm] Feo	illegal		
Fn \ (Vo[Fnm] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] [	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm]]	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] (	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm])	ambivalent	Fn \ Fnm	4
Fn \ (Vo[Fnm] ←	wait	Fn \ (	4

Sequence	Response	Equivalent	Trace
Fn \ (Vo[Fnm] ⁖	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] .	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] ⁑	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] /	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] \	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[Fnm] D	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] M	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnm] Vu	subsumed	Fn \ (Fe	

Table 177. Source Input Enumeration: Func. Exprs., Fn \ (Vo[Fnd]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[Fnd] E	illegal		
Fn \ (Vo[Fnd] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Fea	illegal		
Fn \ (Vo[Fnd] Feaa	illegal		
Fn \ (Vo[Fnd] Fed	illegal		
Fn \ (Vo[Fnd] Feda	illegal		
Fn \ (Vo[Fnd] Fem	illegal		
Fn \ (Vo[Fnd] Fema	illegal		
Fn \ (Vo[Fnd] Feo	illegal		
Fn \ (Vo[Fnd] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Fnd	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Vo[Fnd] [	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd]]	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] (	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd])	wait	Fn \ Fnd	4
Fn \ (Vo[Fnd] ←	wait	Fn \ (	4
Fn \ (Vo[Fnd] ¨̃	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] .	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] ⃰	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] /	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] \	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[Fnd] D	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] M	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[Fnd] Vu	subsumed	Fn \ (Fe	

Table 178. Source Input Enumeration: Func. Exprs., Fn \ (Vo[¨̃]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[¨̃] E	illegal		
Fn \ (Vo[¨̃] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[¨̃] Fea	illegal		
Fn \ (Vo[¨̃] Feaa	illegal		
Fn \ (Vo[¨̃] Fed	illegal		
Fn \ (Vo[¨̃] Feda	illegal		
Fn \ (Vo[¨̃] Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn \ (Vo[˝] Fema	illegal		
Fn \ (Vo[˝] Feo	illegal		
Fn \ (Vo[˝] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] [	subsumed	Fn \ (Fe	
Fn \ (Vo[˝]]	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] (	subsumed	Fn \ (Fe	
Fn \ (Vo[˝])	Syntax Error	empty	4, 10
Fn \ (Vo[˝] ←	wait	Fn \ (	4, D5
Fn \ (Vo[˝] ˝	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] .	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] ⁎	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] /	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] \	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[˝] D	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] M	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[˝] Vu	subsumed	Fn \ (Fe	

Table 179. Source Input Enumeration: Func. Exprs., Fn \ (Vo[∘]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[∘] E	illegal		
Fn \ (Vo[∘] Ea	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Vo[∘] Fea	illegal		
Fn \ (Vo[∘] Feaa	illegal		
Fn \ (Vo[∘] Fed	illegal		
Fn \ (Vo[∘] Feda	illegal		
Fn \ (Vo[∘] Fem	illegal		
Fn \ (Vo[∘] Fema	illegal		
Fn \ (Vo[∘] Feo	illegal		
Fn \ (Vo[∘] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] [	subsumed	Fn \ (Fe	
Fn \ (Vo[∘]]	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] (	subsumed	Fn \ (Fe	
Fn \ (Vo[∘])	wait	Fn \ ∘	4, D5
Fn \ (Vo[∘] ←	wait	Fn \ (	4, D5
Fn \ (Vo[∘] ˷	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] .	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] ⁑	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] /	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] \	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[∘] D	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] M	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[∘] Vu	subsumed	Fn \ (Fe	

Table 180. Source Input Enumeration: Func. Exprs., Fn \ (Vo[¨]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[¨] E	illegal		
Fn \ (Vo[¨] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Fea	illegal		
Fn \ (Vo[¨] Feaa	illegal		
Fn \ (Vo[¨] Fed	illegal		
Fn \ (Vo[¨] Feda	illegal		
Fn \ (Vo[¨] Fem	illegal		
Fn \ (Vo[¨] Fema	illegal		
Fn \ (Vo[¨] Feo	illegal		
Fn \ (Vo[¨] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] [	subsumed	Fn \ (Fe	
Fn \ (Vo[¨]]	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] (	subsumed	Fn \ (Fe	
Fn \ (Vo[¨])	monadic	Fn \ ¨	4, D5
Fn \ (Vo[¨] ←	wait	Fn \ (	4, D5
Fn \ (Vo[¨] ⍨	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] .	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] ⍣	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] /	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] ⌿	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] \	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] ⍀	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[¨] D	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] M	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Vi	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Vo[¨] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[¨] Vu	subsumed	Fn \ (Fe	

Table 181. Source Input Enumeration: Func. Exprs., Fn \ (Vo[̈*]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[̈*] E	illegal		
Fn \ (Vo[̈*] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] Fea	illegal		
Fn \ (Vo[̈*] Feaa	illegal		
Fn \ (Vo[̈*] Fed	illegal		
Fn \ (Vo[̈*] Feda	illegal		
Fn \ (Vo[̈*] Fem	illegal		
Fn \ (Vo[̈*] Fema	illegal		
Fn \ (Vo[̈*] Feo	illegal		
Fn \ (Vo[̈*] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] [	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*]]	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] (	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*])	wait	Fn \ ̈*	4, D5
Fn \ (Vo[̈*] ←	wait	Fn \ (	4, D5
Fn \ (Vo[̈*] ̃	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] .	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] ̈*	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] /	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] \	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[̈*] Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn \ (Vo[⁑] D	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] M	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[⁑] Vu	subsumed	Fn \ (Fe	

Table 182. Source Input Enumeration: Func. Exprs., Fn \ (Vo[.]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[.] E	illegal		
Fn \ (Vo[.] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Fea	illegal		
Fn \ (Vo[.] Feaa	illegal		
Fn \ (Vo[.] Fed	illegal		
Fn \ (Vo[.] Feda	illegal		
Fn \ (Vo[.] Fem	illegal		
Fn \ (Vo[.] Fema	illegal		
Fn \ (Vo[.] Feo	illegal		
Fn \ (Vo[.] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[.] [	subsumed	Fn \ (Fe	
Fn \ (Vo[.]]	subsumed	Fn \ (Fe	
Fn \ (Vo[.] (	subsumed	Fn \ (Fe	
Fn \ (Vo[.])	wait	Fn \ .	4, D5
Fn \ (Vo[.] ←	wait	Fn \ (	4, D5
Fn \ (Vo[.] ⁐	subsumed	Fn \ (Fe	
Fn \ (Vo[.] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[.] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[.] .	subsumed	Fn \ (Fe	
Fn \ (Vo[.] ⁑	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Vo[.] /	subsumed	Fn \ (Fe	
Fn \ (Vo[.] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[.] \	subsumed	Fn \ (Fe	
Fn \ (Vo[.] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[.] D	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[.] M	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[.] Vu	subsumed	Fn \ (Fe	

Table 183. Source Input Enumeration: Func. Exprs., Fn \ (Vo[/]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[/] E	illegal		
Fn \ (Vo[/] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Fea	illegal		
Fn \ (Vo[/] Feaa	illegal		
Fn \ (Vo[/] Fed	illegal		
Fn \ (Vo[/] Feda	illegal		
Fn \ (Vo[/] Fem	illegal		
Fn \ (Vo[/] Fema	illegal		
Fn \ (Vo[/] Feo	illegal		
Fn \ (Vo[/] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Fnd	subsumed	Fn \ (Fe	
Fn \ (Vo[/] [	subsumed	Fn \ (Fe	
Fn \ (Vo[/]]	subsumed	Fn \ (Fe	
Fn \ (Vo[/] (	subsumed	Fn \ (Fe	
Fn \ (Vo[/])	ambivalent	Fn \ /	4, D5
Fn \ (Vo[/] ←	wait	Fn \ (	4, D5

Sequence	Response	Equivalent	Trace
Fn \ (Vo[/] ◌̵̈	subsumed	Fn \ (Fe	
Fn \ (Vo[/] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[/] ◌̈	subsumed	Fn \ (Fe	
Fn \ (Vo[/] .	subsumed	Fn \ (Fe	
Fn \ (Vo[/] ◌̈*	subsumed	Fn \ (Fe	
Fn \ (Vo[/] /	subsumed	Fn \ (Fe	
Fn \ (Vo[/] ≠	subsumed	Fn \ (Fe	
Fn \ (Vo[/] \	subsumed	Fn \ (Fe	
Fn \ (Vo[/] ↚	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[/] D	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[/] M	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[/] Vu	subsumed	Fn \ (Fe	

Table 184. Source Input Enumeration: Func. Exprs., Fn \ (Vo[\]

Sequence	Response	Equivalent	Trace
Fn \ (Vo[\] E	illegal		
Fn \ (Vo[\] Ea	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Fea	illegal		
Fn \ (Vo[\] Feaa	illegal		
Fn \ (Vo[\] Fed	illegal		
Fn \ (Vo[\] Feda	illegal		
Fn \ (Vo[\] Fem	illegal		
Fn \ (Vo[\] Fema	illegal		
Fn \ (Vo[\] Feo	illegal		
Fn \ (Vo[\] Fn	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Fnm	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Fnd	subsumed	Fn \ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ (Vo[\] [	subsumed	Fn \ (Fe	
Fn \ (Vo[\]]	subsumed	Fn \ (Fe	
Fn \ (Vo[\] (	subsumed	Fn \ (Fe	
Fn \ (Vo[\])	monadic	Fn \ \	4, D5
Fn \ (Vo[\] ←	wait	Fn \ (	4, D5
Fn \ (Vo[\] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[\] ∘	subsumed	Fn \ (Fe	
Fn \ (Vo[\] ¨	subsumed	Fn \ (Fe	
Fn \ (Vo[\] .	subsumed	Fn \ (Fe	
Fn \ (Vo[\] ⍤	subsumed	Fn \ (Fe	
Fn \ (Vo[\] /	subsumed	Fn \ (Fe	
Fn \ (Vo[\] ⌿	subsumed	Fn \ (Fe	
Fn \ (Vo[\] \	subsumed	Fn \ (Fe	
Fn \ (Vo[\] ⍀	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Break	Interrupt	empty, top-level	D3
Fn \ (Vo[\] D	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Da	subsumed	Fn \ (Fe	
Fn \ (Vo[\] M	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Ma	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Vi	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Vf	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Vo	subsumed	Fn \ (Fe	
Fn \ (Vo[\] Vu	subsumed	Fn \ (Fe	

Table 185. Source Input Enumeration: Function Expressions, Fn \ (Vu

Sequence	Response	Equivalent	Trace
Fn \ (Vu E	illegal		
Fn \ (Vu Ea	subsumed	Fn \ (Fe	
Fn \ (Vu Fea	illegal		
Fn \ (Vu Feaa	illegal		
Fn \ (Vu Fed	illegal		
Fn \ (Vu Feda	illegal		
Fn \ (Vu Fem	illegal		

Sequence	Response	Equivalent	Trace
Fn \ (Vu Fema	illegal		
Fn \ (Vu Feo	illegal		
Fn \ (Vu Fn	subsumed	Fn \ (Fe	
Fn \ (Vu Fnm	subsumed	Fn \ (Fe	
Fn \ (Vu Fnd	subsumed	Fn \ (Fe	
Fn \ (Vu [	subsumed	Fn \ (Fe	
Fn \ (Vu]	subsumed	Fn \ (Fe	
Fn \ (Vu (	subsumed	Fn \ (Fe	
Fn \ (Vu)	Value Error	empty	4, 10
Fn \ (Vu ←	wait	Fn \ (	4
Fn \ (Vu ⁖	subsumed	Fn \ (Fe	
Fn \ (Vu ∘	subsumed	Fn \ (Fe	
Fn \ (Vu ¨	subsumed	Fn \ (Fe	
Fn \ (Vu .	subsumed	Fn \ (Fe	
Fn \ (Vu ⁑	subsumed	Fn \ (Fe	
Fn \ (Vu /	subsumed	Fn \ (Fe	
Fn \ (Vu ≠	subsumed	Fn \ (Fe	
Fn \ (Vu \	subsumed	Fn \ (Fe	
Fn \ (Vu ↚	subsumed	Fn \ (Fe	
Fn \ (Vu Break	Interrupt	empty, top-level	D3
Fn \ (Vu D	subsumed	Fn \ (Fe	
Fn \ (Vu Da	subsumed	Fn \ (Fe	
Fn \ (Vu M	subsumed	Fn \ (Fe	
Fn \ (Vu Ma	subsumed	Fn \ (Fe	
Fn \ (Vu Vi	subsumed	Fn \ (Fe	
Fn \ (Vu Vf	subsumed	Fn \ (Fe	
Fn \ (Vu Vo	subsumed	Fn \ (Fe	
Fn \ (Vu Vu	subsumed	Fn \ (Fe	

Table 186. Source Input Enumeration: Function Expressions, Fn \ ∘ (

Sequence	Response	Equivalent	Trace
Fn \ ∘ (E	illegal		
Fn \ ∘ (Ea	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Fea	wait		4
Fn \ ∘ (Feaa	wait	Fn \ ∘ (Fea	4
Fn \ ∘ (Fed	Syntax Error	empty	4, 10
Fn \ ∘ (Feda	Syntax Error	empty	4, 10
Fn \ ∘ (Fem	wait	Fn \ ∘ (Fea	4
Fn \ ∘ (Fema	wait	Fn \ ∘ (Fem	4
Fn \ ∘ (Feo	Syntax Error	empty	4, 10
Fn \ ∘ (Fn	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fnm	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fnd	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ ([	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ ( ]	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ ((	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ ( )	Syntax Error	empty	4, 10
Fn \ ∘ (←	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (¨̃	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (∘	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (¨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (.	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (⁎̈	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (/	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (≠	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (\	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (∤	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Break	Interrupt	empty, top-level	D3
Fn \ ∘ (D	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Da	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (M	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Ma	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vi	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf	wait		4
Fn \ ∘ (Vo	wait		4
Fn \ ∘ (Vu	wait		4

Table 187. Source Input Enumeration: Function Expressions, Fn \ ⁑ (

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (E	illegal		
Fn \ ⁑ (Ea	Syntax Error	empty	4, 10
Fn \ ⁑ (Fea	wait		4
Fn \ ⁑ (Feaa	wait	Fn \ ⁑ (Fea	4
Fn \ ⁑ (Fed	wait	Fn \ ⁑ (Fea	4
Fn \ ⁑ (Feda	wait	Fn \ ⁑ (Fed	4
Fn \ ⁑ (Fem	Syntax Error	empty	4, 10
Fn \ ⁑ (Fema	Syntax Error	empty	4, 10
Fn \ ⁑ (Feo	Syntax Error	empty	4, 10
Fn \ ⁑ (Fn	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Fnm	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Fnd	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ ([	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ ( ]	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ ((	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ ( )	Syntax Error	empty	4, 10
Fn \ ⁑ (←	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (≃	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (∘	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (¨	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (.	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (⁑	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (/	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (≠	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (\	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (↚	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Break	Interrupt	empty, top-level	D3
Fn \ ⁑ (D	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Da	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (M	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Ma	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vi	subsumed	Fn \ ⁑ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (Vf	wait		4
Fn \ ⁑ (Vo	wait		4
Fn \ ⁑ (Vu	wait		4

Table 188. Source Input Enumeration: Function Expressions, Da ∘ (Fea

Sequence	Response	Equivalent	Trace
Da ∘ (Fea E	illegal		
Da ∘ (Fea Ea	subsumed	Da ∘ (Fe	
Da ∘ (Fea Fea	illegal		
Da ∘ (Fea Feaa	illegal		
Da ∘ (Fea Fed	illegal		
Da ∘ (Fea Feda	illegal		
Da ∘ (Fea Fem	illegal		
Da ∘ (Fea Fema	illegal		
Da ∘ (Fea Feo	illegal		
Da ∘ (Fea Fn	subsumed	Da ∘ (Fe	
Da ∘ (Fea Fnm	subsumed	Da ∘ (Fe	
Da ∘ (Fea Fnd	subsumed	Da ∘ (Fe	
Da ∘ (Fea [	subsumed	Da ∘ (Fe	
Da ∘ (Fea]	subsumed	Da ∘ (Fe	
Da ∘ (Fea (	subsumed	Da ∘ (Fe	
Da ∘ (Fea)	dyadic	Da ∘ Fn	4
Da ∘ (Fea ←	subsumed	Da ∘ (Fe	
Da ∘ (Fea ⍨	subsumed	Da ∘ (Fe	
Da ∘ (Fea ∘	subsumed	Da ∘ (Fe	
Da ∘ (Fea ¨	subsumed	Da ∘ (Fe	
Da ∘ (Fea .	subsumed	Da ∘ (Fe	
Da ∘ (Fea ⁑	subsumed	Da ∘ (Fe	
Da ∘ (Fea /	subsumed	Da ∘ (Fe	
Da ∘ (Fea ⌿	subsumed	Da ∘ (Fe	
Da ∘ (Fea \	subsumed	Da ∘ (Fe	
Da ∘ (Fea ⍀	subsumed	Da ∘ (Fe	

Sequence	Response	Equivalent	Trace
Da ∘ (Fea Break	Interrupt	empty, top-level	D3
Da ∘ (Fea D	subsumed	Da ∘ (Fe	
Da ∘ (Fea Da	subsumed	Da ∘ (Fe	
Da ∘ (Fea M	subsumed	Da ∘ (Fe	
Da ∘ (Fea Ma	subsumed	Da ∘ (Fe	
Da ∘ (Fea Vi	subsumed	Da ∘ (Fe	
Da ∘ (Fea Vf	subsumed	Da ∘ (Fe	
Da ∘ (Fea Vo	subsumed	Da ∘ (Fe	
Da ∘ (Fea Vu	subsumed	Da ∘ (Fe	

Table 189. Source Input Enumeration: Function Expressions, Da ∘ (Vf

Sequence	Response	Equivalent	Trace
Da ∘ (Vf E	illegal		
Da ∘ (Vf Ea	subsumed	Da ∘ (Fe	
Da ∘ (Vf Fea	illegal		
Da ∘ (Vf Feaa	illegal		
Da ∘ (Vf Fed	illegal		
Da ∘ (Vf Feda	illegal		
Da ∘ (Vf Fem	illegal		
Da ∘ (Vf Fema	illegal		
Da ∘ (Vf Feo	illegal		
Da ∘ (Vf Fn	subsumed	Da ∘ (Fe	
Da ∘ (Vf Fnm	subsumed	Da ∘ (Fe	
Da ∘ (Vf Fnd	subsumed	Da ∘ (Fe	
Da ∘ (Vf [	subsumed	Da ∘ (Fe	
Da ∘ (Vf]	subsumed	Da ∘ (Fe	
Da ∘ (Vf (	subsumed	Da ∘ (Fe	
Da ∘ (Vf)	dyadic	Da ∘ Vf	4
Da ∘ (Vf ←	wait	Da ∘ (	4
Da ∘ (Vf ¨	subsumed	Da ∘ (Fe	
Da ∘ (Vf ∘	subsumed	Da ∘ (Fe	
Da ∘ (Vf ¨	subsumed	Da ∘ (Fe	
Da ∘ (Vf .	subsumed	Da ∘ (Fe	

Sequence	Response	Equivalent	Trace
Da ∘ (Vf ⁑	subsumed	Da ∘ (Fe	
Da ∘ (Vf /	subsumed	Da ∘ (Fe	
Da ∘ (Vf ⁄	subsumed	Da ∘ (Fe	
Da ∘ (Vf \	subsumed	Da ∘ (Fe	
Da ∘ (Vf ⧵	subsumed	Da ∘ (Fe	
Da ∘ (Vf Break	Interrupt	empty, top-level	D3
Da ∘ (Vf D	subsumed	Da ∘ (Fe	
Da ∘ (Vf Da	subsumed	Da ∘ (Fe	
Da ∘ (Vf M	subsumed	Da ∘ (Fe	
Da ∘ (Vf Ma	subsumed	Da ∘ (Fe	
Da ∘ (Vf Vi	subsumed	Da ∘ (Fe	
Da ∘ (Vf Vf	subsumed	Da ∘ (Fe	
Da ∘ (Vf Vo	subsumed	Da ∘ (Fe	
Da ∘ (Vf Vu	subsumed	Da ∘ (Fe	

Table 190. Source Input Enumeration: Function Expressions, Da ∘ (Vo

Sequence	Response	Equivalent	Trace
Da ∘ (Vo E	illegal		
Da ∘ (Vo Ea	subsumed	Da ∘ (Fe	
Da ∘ (Vo Fea	illegal		
Da ∘ (Vo Feaa	illegal		
Da ∘ (Vo Fed	illegal		
Da ∘ (Vo Feda	illegal		
Da ∘ (Vo Fem	illegal		
Da ∘ (Vo Fema	illegal		
Da ∘ (Vo Feo	illegal		
Da ∘ (Vo Fn	subsumed	Da ∘ (Fe	
Da ∘ (Vo Fnm	subsumed	Da ∘ (Fe	
Da ∘ (Vo Fnd	subsumed	Da ∘ (Fe	
Da ∘ (Vo [	subsumed	Da ∘ (Fe	
Da ∘ (Vo]	subsumed	Da ∘ (Fe	
Da ∘ (Vo (	subsumed	Da ∘ (Fe	
Da ∘ (Vo)	Syntax Error	empty	4, 10

Sequence	Response	Equivalent	Trace
Da ∘ (Vo ←	wait	Da ∘ (	4
Da ∘ (Vo ¨	subsumed	Da ∘ (Fe	
Da ∘ (Vo ∘	subsumed	Da ∘ (Fe	
Da ∘ (Vo ¨	subsumed	Da ∘ (Fe	
Da ∘ (Vo .	subsumed	Da ∘ (Fe	
Da ∘ (Vo ⁎	subsumed	Da ∘ (Fe	
Da ∘ (Vo /	subsumed	Da ∘ (Fe	
Da ∘ (Vo ≠	subsumed	Da ∘ (Fe	
Da ∘ (Vo \	subsumed	Da ∘ (Fe	
Da ∘ (Vo ∤	subsumed	Da ∘ (Fe	
Da ∘ (Vo Break	Interrupt	empty, top-level	D3
Da ∘ (Vo D	subsumed	Da ∘ (Fe	
Da ∘ (Vo Da	subsumed	Da ∘ (Fe	
Da ∘ (Vo M	subsumed	Da ∘ (Fe	
Da ∘ (Vo Ma	subsumed	Da ∘ (Fe	
Da ∘ (Vo Vi	subsumed	Da ∘ (Fe	
Da ∘ (Vo Vf	subsumed	Da ∘ (Fe	
Da ∘ (Vo Vo	subsumed	Da ∘ (Fe	
Da ∘ (Vo Vu	subsumed	Da ∘ (Fe	

Table 191. Source Input Enumeration: Function Expressions, Da ∘ (Vu

Sequence	Response	Equivalent	Trace
Da ∘ (Vu E	illegal		
Da ∘ (Vu Ea	subsumed	Da ∘ (Fe	
Da ∘ (Vu Fea	illegal		
Da ∘ (Vu Feaa	illegal		
Da ∘ (Vu Fed	illegal		
Da ∘ (Vu Feda	illegal		
Da ∘ (Vu Fem	illegal		
Da ∘ (Vu Fema	illegal		
Da ∘ (Vu Feo	illegal		
Da ∘ (Vu Fn	subsumed	Da ∘ (Fe	
Da ∘ (Vu Fnm	subsumed	Da ∘ (Fe	

Sequence	Response	Equivalent	Trace
Da ∘ (Vu Fnd	subsumed	Da ∘ (Fe	
Da ∘ (Vu [	subsumed	Da ∘ (Fe	
Da ∘ (Vu]	subsumed	Da ∘ (Fe	
Da ∘ (Vu (	subsumed	Da ∘ (Fe	
Da ∘ (Vu)	Value Error	empty	4, 10
Da ∘ (Vu ←	wait	Da ∘ (	4
Da ∘ (Vu ⁖	subsumed	Da ∘ (Fe	
Da ∘ (Vu ∘	subsumed	Da ∘ (Fe	
Da ∘ (Vu ¨	subsumed	Da ∘ (Fe	
Da ∘ (Vu .	subsumed	Da ∘ (Fe	
Da ∘ (Vu ⁑	subsumed	Da ∘ (Fe	
Da ∘ (Vu /	subsumed	Da ∘ (Fe	
Da ∘ (Vu ≠	subsumed	Da ∘ (Fe	
Da ∘ (Vu \	subsumed	Da ∘ (Fe	
Da ∘ (Vu ↚	subsumed	Da ∘ (Fe	
Da ∘ (Vu Break	Interrupt	empty, top-level	D3
Da ∘ (Vu D	subsumed	Da ∘ (Fe	
Da ∘ (Vu Da	subsumed	Da ∘ (Fe	
Da ∘ (Vu M	subsumed	Da ∘ (Fe	
Da ∘ (Vu Ma	subsumed	Da ∘ (Fe	
Da ∘ (Vu Vi	subsumed	Da ∘ (Fe	
Da ∘ (Vu Vf	subsumed	Da ∘ (Fe	
Da ∘ (Vu Vo	subsumed	Da ∘ (Fe	
Da ∘ (Vu Vu	subsumed	Da ∘ (Fe	

Table 192. Source Input Enumeration: Func. Exprs., Da ⁑ (Fea

Sequence	Response	Equivalent	Trace
Da ⁑ (Fea E	illegal		
Da ⁑ (Fea Ea	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Fea	illegal		
Da ⁑ (Fea Feaa	illegal		
Da ⁑ (Fea Fed	illegal		
Da ⁑ (Fea Feda	illegal		

Sequence	Response	Equivalent	Trace
Da ⁑ (Fea Fem	illegal		
Da ⁑ (Fea Fema	illegal		
Da ⁑ (Fea Feo	illegal		
Da ⁑ (Fea Fn	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Fnm	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Fnd	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea [	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea]	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea (	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea)	dyadic	Da ⁑ Fn	4
Da ⁑ (Fea ←	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea ⍨	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea ∘	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea ¨	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea .	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea ⍣	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea /	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea ⌿	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea \	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea ⍀	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Break	Interrupt	empty, top-level	D3
Da ⁑ (Fea D	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Da	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea M	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Ma	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Vi	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Vf	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Vo	subsumed	Da ⁑ (Fe	4
Da ⁑ (Fea Vu	subsumed	Da ⁑ (Fe	4

Table 193. Source Input Enumeration: Function Expressions, Da ⁑ (Vf

Sequence	Response	Equivalent	Trace
Da ⁑ (Vf E	illegal		

Sequence	Response	Equivalent	Trace
Da ⁑ (Vf Ea	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Fea	illegal		
Da ⁑ (Vf Feaa	illegal		
Da ⁑ (Vf Fed	illegal		
Da ⁑ (Vf Feda	illegal		
Da ⁑ (Vf Fem	illegal		
Da ⁑ (Vf Fema	illegal		
Da ⁑ (Vf Feo	illegal		
Da ⁑ (Vf Fn	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Fnm	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Fnd	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf [	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf]	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf (	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf)	dyadic	Da ⁑ Vf	4
Da ⁑ (Vf ←	wait	Da ⁑ (	4
Da ⁑ (Vf ⍨	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf ∘	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf ¨	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf .	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf ⍣	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf /	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf ⌿	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf \	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf ⍀	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Break	Interrupt	empty, top-level	D3
Da ⁑ (Vf D	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Da	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf M	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Ma	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Vi	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Vf	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vf Vo	subsumed	Da ⁑ (Fe	4

Sequence	Response	Equivalent	Trace
Da ⁑ (Vf Vu	subsumed	Da ⁑ (Fe	4

Table 194. Source Input Enumeration: Function Expressions, Da ⁑ (Vo

Sequence	Response	Equivalent	Trace
Da ⁑ (Vo E	illegal		
Da ⁑ (Vo Ea	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Fea	illegal		
Da ⁑ (Vo Feaa	illegal		
Da ⁑ (Vo Fed	illegal		
Da ⁑ (Vo Feda	illegal		
Da ⁑ (Vo Fem	illegal		
Da ⁑ (Vo Fema	illegal		
Da ⁑ (Vo Feo	illegal		
Da ⁑ (Vo Fn	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Fnm	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Fnd	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo [	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo]	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo (	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo)	Syntax Error	empty	4, 10
Da ⁑ (Vo ←	wait	Da ⁑ (	4
Da ⁑ (Vo ⁏	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo ∘	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo ¨	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo .	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo ⁑	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo /	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo ≠	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo \	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo ⍀	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Break	Interrupt	empty, top-level	D3
Da ⁑ (Vo D	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Da	subsumed	Da ⁑ (Fe	4

Sequence	Response	Equivalent	Trace
Da ⁑ (Vo M	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Ma	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Vi	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Vf	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Vo	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vo Vu	subsumed	Da ⁑ (Fe	4

Table 195. Source Input Enumeration: Function Expressions, Da ⁑ (Vu

Sequence	Response	Equivalent	Trace
Da ⁑ (Vu E	illegal		
Da ⁑ (Vu Ea	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Fea	illegal		
Da ⁑ (Vu Feaa	illegal		
Da ⁑ (Vu Fed	illegal		
Da ⁑ (Vu Feda	illegal		
Da ⁑ (Vu Fem	illegal		
Da ⁑ (Vu Fema	illegal		
Da ⁑ (Vu Feo	illegal		
Da ⁑ (Vu Fn	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Fnm	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Fnd	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu [	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu]	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu (	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu)	Value Error	empty	4, 10
Da ⁑ (Vu ←	wait	Da ⁑ (	4
Da ⁑ (Vu ⁏	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu ∘	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu ¨	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu .	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu ⁑	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu /	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu ≠	subsumed	Da ⁑ (Fe	4

Sequence	Response	Equivalent	Trace
Da ⁑ (Vu \	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu ↚	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Break	Interrupt	empty, top-level	D3
Da ⁑ (Vu D	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Da	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu M	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Ma	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Vi	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Vf	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Vo	subsumed	Da ⁑ (Fe	4
Da ⁑ (Vu Vu	subsumed	Da ⁑ (Fe	4

Table 196. Source Input Enumeration: Func. Exprs., Fn \ ∘ (Fea

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Fea E	illegal		
Fn \ ∘ (Fea Ea	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Fea	illegal		
Fn \ ∘ (Fea Feaa	illegal		
Fn \ ∘ (Fea Fed	illegal		
Fn \ ∘ (Fea Feda	illegal		
Fn \ ∘ (Fea Fem	illegal		
Fn \ ∘ (Fea Fema	illegal		
Fn \ ∘ (Fea Feo	illegal		
Fn \ ∘ (Fea Fn	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Fnm	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Fnd	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea [	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea]	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea (	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea)	monadic	Fn \ ∘ Fn	4
Fn \ ∘ (Fea ←	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea ⁏	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea ∘	subsumed	Fn \ ∘ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Fea ¨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea .	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea ⁎	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea /	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea ⁄	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea \	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea ∖	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Break	Interrupt	empty, top-level	D3
Fn \ ∘ (Fea D	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Da	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea M	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Ma	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Vi	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Vf	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Vo	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Fea Vu	subsumed	Fn \ ∘ (Fe	

Table 197. Source Input Enumeration: Func. Exprs., Fn \ ∘ (Vf

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Vf E	illegal		
Fn \ ∘ (Vf Ea	Syntax Error	empty	4, 10
Fn \ ∘ (Vf Fea	illegal		
Fn \ ∘ (Vf Feaa	illegal		
Fn \ ∘ (Vf Fed	illegal		
Fn \ ∘ (Vf Feda	illegal		
Fn \ ∘ (Vf Fem	illegal		
Fn \ ∘ (Vf Fema	illegal		
Fn \ ∘ (Vf Feo	illegal		
Fn \ ∘ (Vf Fn	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Fnm	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Fnd	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf [	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf]	subsumed	Fn \ ∘ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Vf (	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf)	monadic	Fn \ ∘ Vf	4
Fn \ ∘ (Vf ←	wait	Fn \ ∘ (	4
Fn \ ∘ (Vf ¨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf ∘	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf ¨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf .	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf ⍣	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf /	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf ⌿	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf \	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf ⍀	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Break	Interrupt	empty, top-level	D3
Fn \ ∘ (Vf D	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Da	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf M	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Ma	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Vi	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Vf	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Vo	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vf Vu	subsumed	Fn \ ∘ (Fe	

Table 198. Source Input Enumeration: Func. Exprs., Fn \ ∘ (Vo

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Vo E	illegal		
Fn \ ∘ (Vo Ea	Syntax Error	empty	4, 10
Fn \ ∘ (Vo Fea	illegal		
Fn \ ∘ (Vo Feaa	illegal		
Fn \ ∘ (Vo Fed	illegal		
Fn \ ∘ (Vo Feda	illegal		
Fn \ ∘ (Vo Fem	illegal		
Fn \ ∘ (Vo Fema	illegal		
Fn \ ∘ (Vo Feo	illegal		

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Vo Fn	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Fnm	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Fnd	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo [	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo]	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo (	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo)	Syntax Error	empty	4, 10
Fn \ ∘ (Vo ←	wait	Fn \ ∘ (	4
Fn \ ∘ (Vo ⍨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo ∘	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo ¨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo .	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo ⍣	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo /	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo ⌿	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo \	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo ⍀	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Break	Interrupt	empty, top-level	D3
Fn \ ∘ (Vo D	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Da	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo M	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Ma	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Vi	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Vf	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Vo	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vo Vu	subsumed	Fn \ ∘ (Fe	

Table 199. Source Input Enumeration: Func. Exprs., Fn \ ∘ (Vu

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Vu E	illegal		
Fn \ ∘ (Vu Ea	Syntax Error	empty	4, 10
Fn \ ∘ (Vu Fea	illegal		
Fn \ ∘ (Vu Feaa	illegal		

Sequence	Response	Equivalent	Trace
Fn \ ∘ (Vu Fed	illegal		
Fn \ ∘ (Vu Feda	illegal		
Fn \ ∘ (Vu Fem	illegal		
Fn \ ∘ (Vu Fema	illegal		
Fn \ ∘ (Vu Feo	illegal		
Fn \ ∘ (Vu Fn	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Fnm	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Fnd	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu [	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu]	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu (	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu)	Value Error	empty	4, 10
Fn \ ∘ (Vu ←	wait	Fn \ ∘ (	4
Fn \ ∘ (Vu ⁖	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu ∘	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu ¨	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu .	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu ⁑	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu /	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu ⁄	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu \	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu ⅄	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Break	Interrupt	empty, top-level	D3
Fn \ ∘ (Vu D	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Da	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu M	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Ma	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Vi	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Vf	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Vo	subsumed	Fn \ ∘ (Fe	
Fn \ ∘ (Vu Vu	subsumed	Fn \ ∘ (Fe	

Table 200. Source Input Enumeration: Func. Exprs., Fn \ ⍣ (Fea

Sequence	Response	Equivalent	Trace
Fn \ ⍣ (Fea E	illegal		
Fn \ ⍣ (Fea Ea	Syntax Error	empty	4, 10
Fn \ ⍣ (Fea Fea	illegal		
Fn \ ⍣ (Fea Feaa	illegal		
Fn \ ⍣ (Fea Fed	illegal		
Fn \ ⍣ (Fea Feda	illegal		
Fn \ ⍣ (Fea Fem	illegal		
Fn \ ⍣ (Fea Fema	illegal		
Fn \ ⍣ (Fea Feo	illegal		
Fn \ ⍣ (Fea Fn	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea Fnm	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea Fnd	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea [	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea]	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea (	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea)	monadic	Fn \ ⍣ Fn	4
Fn \ ⍣ (Fea ←	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea ⍨	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea ∘	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea ¨	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea .	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea ⍣	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea /	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea ⌿	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea \	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea ⍀	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea Break	Interrupt	empty, top-level	D3
Fn \ ⍣ (Fea D	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea Da	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea M	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea Ma	subsumed	Fn \ ⍣ (Fe	
Fn \ ⍣ (Fea Vi	subsumed	Fn \ ⍣ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ ⁕ (Fea Vf	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Fea Vo	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Fea Vu	subsumed	Fn \ ⁕ (Fe	

Table 201. Source Input Enumeration: Func. Exprs., Fn \ ⁕ (Vf

Sequence	Response	Equivalent	Trace
Fn \ ⁕ (Vf E	illegal		
Fn \ ⁕ (Vf Ea	Syntax Error	empty	4, 10
Fn \ ⁕ (Vf Fea	illegal		
Fn \ ⁕ (Vf Feaa	illegal		
Fn \ ⁕ (Vf Fed	illegal		
Fn \ ⁕ (Vf Feda	illegal		
Fn \ ⁕ (Vf Fem	illegal		
Fn \ ⁕ (Vf Fema	illegal		
Fn \ ⁕ (Vf Feo	illegal		
Fn \ ⁕ (Vf Fn	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf Fnm	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf Fnd	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf [	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf]	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf (	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf)	monadic	Fn \ ⁕ Vf	4
Fn \ ⁕ (Vf ←	wait	Fn \ ⁕ (	4
Fn \ ⁕ (Vf ⍨	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf ∘	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf ¨	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf .	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf ⁕	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf /	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf ⌿	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf \	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf ⍀	subsumed	Fn \ ⁕ (Fe	
Fn \ ⁕ (Vf Break	Interrupt	empty, top-level	D3

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (Vf D	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf Da	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf M	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf Ma	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf Vi	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf Vf	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf Vo	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vf Vu	subsumed	Fn \ ⁑ (Fe	

Table 202. Source Input Enumeration: Func. Exprs., Fn \ ⁑ (Vo

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (Vo E	illegal		
Fn \ ⁑ (Vo Ea	Syntax Error	empty	4, 10
Fn \ ⁑ (Vo Fea	illegal		
Fn \ ⁑ (Vo Feaa	illegal		
Fn \ ⁑ (Vo Fed	illegal		
Fn \ ⁑ (Vo Feda	illegal		
Fn \ ⁑ (Vo Fem	illegal		
Fn \ ⁑ (Vo Fema	illegal		
Fn \ ⁑ (Vo Feo	illegal		
Fn \ ⁑ (Vo Fn	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Fnm	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Fnd	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo [	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo]	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo (	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo)	Syntax Error	empty	4, 10
Fn \ ⁑ (Vo ←	wait	Fn \ ⁑ (	4
Fn \ ⁑ (Vo ⁓	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo ∘	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo ¨	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo .	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo ⁑	subsumed	Fn \ ⁑ (Fe	

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (Vo /	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo ≠	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo \	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo ↛	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Break	Interrupt	empty, top-level	D3
Fn \ ⁑ (Vo D	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Da	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo M	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Ma	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Vi	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Vf	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Vo	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vo Vu	subsumed	Fn \ ⁑ (Fe	

Table 203. Source Input Enumeration: Func. Exprs., Fn \ ⁑ (Vu

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (Vu E	illegal		
Fn \ ⁑ (Vu Ea	Syntax Error	empty	4, 10
Fn \ ⁑ (Vu Fea	illegal		
Fn \ ⁑ (Vu Feaa	illegal		
Fn \ ⁑ (Vu Fed	illegal		
Fn \ ⁑ (Vu Feda	illegal		
Fn \ ⁑ (Vu Fem	illegal		
Fn \ ⁑ (Vu Fema	illegal		
Fn \ ⁑ (Vu Feo	illegal		
Fn \ ⁑ (Vu Fn	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Fnm	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Fnd	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu [	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu]	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu (	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu)	Value Error	empty	4, 10
Fn \ ⁑ (Vu ←	wait	Fn \ ⁑ (	4

Sequence	Response	Equivalent	Trace
Fn \ ⁑ (Vu ⁏	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu ∘	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu ¨	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu .	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu ⁑	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu /	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu ≠	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu \	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu ↚	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Break	Interrupt	empty, top-level	D3
Fn \ ⁑ (Vu D	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Da	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu M	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Ma	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Vi	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Vf	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Vo	subsumed	Fn \ ⁑ (Fe	
Fn \ ⁑ (Vu Vu	subsumed	Fn \ ⁑ (Fe	

Module Invocation Enumeration

The enumeration of the module invocation is much simpler than that for the Source Input enumeration. We mostly include this enumeration to be clear about the basic cases, and the basic responses.

Table 204. Module Invocation Enumeration: Top-level

Sequence	Response	Equivalent	Trace
Fv	Value	empty	D6
Var	Value	empty	D6
Ub	Value Error	empty	D7
In	illegal		
Err	illegal		
Call	wait		4

Table 205. Module Invocation Enumeration: Top-level, Call

Sequence	Response	Equivalent	Trace
Call Fv	illegal		
Call Var	illegal		
Call Ub	illegal		
Call In	Value	empty	4
Call Err	Error	empty	D8
Call Call	illegal		

Derived Requirements

The following are the requirements that were derived from the sequence enumeration. They will be merged into the *Software Requirements* at the end of specification.

1. Only a single documented function is exposed from the compiler namespace.
2. When given a pathname that is an invalid pathname, a `DOMAIN ERROR` should be signalled.
3. An interrupt or break signal shall cause an immediate termination of the compiler with a signal `INTERRUPT`. Any resources in use at the time, including files, shall be released as is.
4. An error in the LLVM system shall signal an `INTERNAL ERROR`.
5. Allow for any operator to be named or parenthesized.
6. The namespace returned by `CoDfns.Fix` should allow both calling of the functions defined in the given namespace script as well as rebinding them to names outside of the namespace in a manner consistent with normally fixed namespaces.
7. Attempting to access a variable in the namespace returned by `CoDfns.Fix` that is not bound by the namespace script should signal a VALUE ERROR.
8. Any erroneous input passed to a function of a namespace returned by `CoDfns.Fix` should result in the same error as would have been produced by giving the same input to the namespace returned by the `⎕FIX` function on the same namespace script.

Canonical Sequence Analysis

Canonical sequence analysis is only necessary for the Source Input enumeration, and will not be necessary to understand or use the Module invocation enumeration.

There is one canonical sequence analysis for each of the enumerations, mapping to one or more recursive relationships.

The top-level enumeration contains the following properties:

Properties for Top-level Canonical Sequences

Fix — Are we currently fixing a namespace? This is a boolean property of yes or no.

Obj — Are we exporting the namespace to a file or not? This is a boolean yes or no property.

Namespace — Are we working inside of a namespace or not? Possible values are: NOTSEEN, OPEN, and CLOSED.

Eot — Are we at the end of the input? This is a boolean yes or no property.

Value — What is the value of the current unit we are processing? Possible values are: UNBOUND, EXPR or FUNC.

Named — Are we naming a function unit? Possible values are: MAYBE, BOUND, UNBOUND, and NO.

Table 206. Canonical Sequence Analysis: Top-level

Sequence	Fix	Obj	Namespace	Eot	Value	Named
empty	No					
Fix	Yes		NOTSEEN	No		
Fix Fne	Yes	Yes		No		
Fix Nss	Yes		OPEN	No		
Fix Nss E	Yes		OPEN	No	EXPR	
Fix Nss Fe	Yes		OPEN	No	FUNC	NO
Fix Nss Nse	Yes		CLOSED	No		
Fix Nss Vfo	Yes		OPEN	No	FUNC	MAYBE
Fix Nss Vu	Yes		OPEN	No	UNBOUND	MAYBE
Fix Nss Vfo ←	Yes		OPEN	No		BOUND
Fix Nss Vu ←	Yes		OPEN	No		UNBOUND
Fix Nss Nse Eot	Yes		CLOSED	Yes		
Fix Nss Vfo ← Fe	Yes		OPEN	No	FUNC	BOUND
Fix Nss Vfo ← Vu	Yes		OPEN	No	UNBOUND	BOUND
Fix Nss Vu ← Fe	Yes		OPEN	No	FUNC	UNBOUND

The following analysis for the canonical sequence of Functions is the analysis for all Function values, including operators, monadic, ambivalent, and dyadic functions.

Properties for Function Canonical Sequences

Bracket — Have we seen an opening bracket? This is a boolean property.

Cond — Does the current statement we are processing have a conditional? This is a boolean property.

Bind — Are we binding a function? Possible values are: NO, BOUND, or UNBOUND.

Value — What sort of value is the expression? Possible values are: EMPTY, EXPR, FUNC, FVAR, or UNBOUND.

Table 207. Canonical Sequence Analysis: Functions

Sequence	Bracket	Cond	Bind	Value
empty	No			
{	Yes	No	NO	EMPTY
{ E	Yes	No	NO	EXPR
{ Vfo	Yes	No	NO	FVAR
{ Vu	Yes	No	NO	UNBOUND
{ E :	Yes	Yes	NO	EMPTY
{ Vfo ←	Yes	No	BOUND	EMPTY
{ Vu ←	Yes	No	UNBOUND	EMPTY
{ E : E	Yes	Yes	NO	EXPR
{ Vfo ← Fe	Yes	No	BOUND	FUNC
{ Vfo ← Vfo	Yes	No	BOUND	FVAR
{ Vfo ← Vu	Yes	No	BOUND	UNBOUND
{ Vu ← Fe	Yes	No	UNBOUND	FUNC

Properties for Expression Canonical Sequence Analysis

Nest — Are we dealing with an unclosed bracket or parenthesis pair, a closed one, or none at all? Possible values are: NONE, PAREN, BRACKET, EBRACK or RBRACK.

Class — What is the class of the expression, such as a potential selective assignment, function application, or atomic value? Possible values are: ATOM. FUNC, or SELECT.

Note that the ATOM value here does not correspond or map over the same concept as the *atomic* response used in expression enumeration. Notably, the *atomic* response is used in the handling of the right operand to an operator, while the ATOM value is used to identify locations of data that will be stranded together, including indexing operations, even though an indexing operation is not consumed in the right operand to an operator.

Last Seen — What was the last seen value type? Possible values are: EMPTY, LIT, VAR, NVAR, UVAR, MIXED, EXPR, or SELEX.

Table 208. Canonical Sequence Analysis: Expressions

Sequence	Nest	Class	Last Seen
Fea	NONE	FUNC	EMPTY
(	PAREN	ATOM	EMPTY
N	NONE	ATOM	LIT
Sm	NONE	SELECT	EMPTY
Va	NONE	ATOM	VAR
Vna	NONE	ATOM	NVAR
Vnu	NONE	ATOM	UVAR
Fea (	PAREN	FUNC	EMPTY
Fea N	NONE	FUNC	LIT
Fea Va	NONE	FUNC	VAR
Fea Vna	NONE	FUNC	NVAR
(E	PAREN	ATOM	EXPR
(Es	PAREN	ATOM	SELEX
N [	BRACKET	ATOM	LIT
N (	PAREN	ATOM	LIT
N Vnu	NONE	ATOM	MIXED
Sm (	PAREN	SELECT	EMPTY
Sm N	NONE	SELECT	LIT
Sm Va	NONE	SELECT	VAR
Sm Vna	NONE	SELECT	NVAR
Va [	BRACKET	ATOM	VAR
Fea (E	PAREN	FUNC	EXPR
Fea (Es	PAREN	FUNC	SELEX

Sequence	Nest	Class	Last Seen
Fea N (	PAREN	FUNC	LIT
Fea Va [	BRACKET	FUNC	VAR
Fea Va (	PAREN	FUNC	VAR
N [E	EBRACK	ATOM	LIT
Sm (E	PAREN	SELECT	EXPR
Sm (Es	PAREN	SELECT	SELEX
Sm N (	PAREN	SELECT	LIT
Sm Va [	BRACKET	SELECT	VAR
Va [E	EBRACK	ATOM	VAR
Va [ ]	RBRACK	ATOM	VAR
Fea N [E	EBRACK	FUNC	LIT
Fea Va [E	EBRACK	FUNC	VAR
Fea Va [ ]	RBRACK	FUNC	VAR
Sm Va [E	EBRACK	SELECT	VAR

Function expressions are by far the most difficult and sequence heavy of the enumerations. The Function Expression enumerations have a great deal of states because of the subtle differences in the ways that operators behave. Much of this is hidden in the interpreter because their behaviors can be encoded in the runtime environment. Since this does not aid a compiler, it is better to encode these semantics as part of the visible external behavior, and not hide it behind the semantics of the runtime system.

Conceptually, we have situations where we just have functions, or functions that are the result of combining some functions or function expressions with operators. Operators can take axis specifications and some funtions may also do so. Some funtions are ambivalent, others dyadic, and a few are explicitly monadic in their arity. Operators are either dyadic or monadic, and may take either only functions, or sometimes function values together with array values. The following properties encode these behaviors.

Properties for Function Expression Canonical Sequence Analysis

Opnd — What is the current function value without taking into consideration the current operator? This would be the left operand if there is an operator to deal with, and would be the function value if there is not. Possible values are: ATOM, AMB, NONE, JOT, MON, or DYA.

Oper — What is the current operator we are dealing with? This will be nothing if we have not seen an operator, or the semantic equivalent value of the

operator that is currently at the top of the parse tree. Possible values are: NONE, DOT, COMP, POW, ANY, EACH, MON, DYA, RED, FUNC, COMM, or SCN.

Axis — Indicates whether a function can take an axis specification or not. It also indicates whether an axis specification has already been seen, and whether an expression for the axis specification has already been seen. Possible values are: NO, YES, SEEN, or FILD.

Nest — Determines whether a parenthesis has been seen, and what value was found in the nesting. Possible values are: NONE, EMPTY, A, AA, M, MA, D, DA, O, OM, OD, COMM, COMP, EACH, POW, DOT, RED, or SCN.

Target — Identifies whether or not we are currently in a targetable position where a variable may be assigned. This is a boolean value.

Table 209. Canonical Sequence Analysis: Function Expressions

Sequence	Opnd	Oper	Axis	Nest	Tgt
Ea	ATOM	NONE	NO	NONE	No
Fn	AMB	NONE	NO	NONE	No
Fnm	NONE	MON	NO	NONE	No
(	NONE	NONE	NO	EMPTY	No
∘	JOT	NONE	NO	NONE	No
Da	DYA	NONE	YES	NONE	No
Ea Fnd	ATOM	DYA	NO	NONE	No
Ea (	ATOM	NONE	NO	EMPTY	No
Ea ∘	ATOM	COMP	NO	NONE	No
Fn (	AMB	NONE	NO	EMPTY	No
Fn ∘	AMB	COMP	NO	NONE	No
Fn .	AMB	DOT	NO	NONE	No
Fn \	MON	NONE	YES	NONE	No
(Fea	AMB	NONE	NO	A	No
(Feaa	AMB	NONE	YES	AA	No
(Fed	DYA	NONE	NO	D	No
(Feda	DYA	NONE	YES	DA	No
(Fem	MON	NONE	NO	M	No
(Fema	MON	NONE	YES	MA	No
(Feo[op]	NONE	ANY	NO	O	No

Sequence	Opnd	Oper	Axis	Nest	Tgt
(Vf	AMB	NONE	NO	A	Yes
(Vo[op]	NONE	ANY	NO	O	Yes
(Vu	NONE	NONE	NO	EMPTY	Yes
Da [	DYA	NONE	SEEN	NONE	No
Da (	DYA	NONE	NO	EMPTY	No
Da ∘	DYA	COMP	NO	NONE	No
Da ⁑	DYA	POW	NO	NONE	No
Ea Fnd (	ATOM	DYA	NO	EMPTY	No
Ea (Feo[Fnm]	ATOM	MON	NO	OM	No
Ea (Feo[Fnd]	ATOM	DYA	NO	OD	No
Ea (Feo[∘]	ATOM	COMP	NO	COMP	No
Ea (Vf	ATOM	FUNC	NO	A	Yes
Ea (Vo[∘]	ATOM	COMP	NO	COMP	Yes
Ea (Vo[Fnm]	ATOM	MON	NO	OM	Yes
Ea (Vo[Fnd]	ATOM	DYA	NO	OD	Yes
Ea (Vu	ATOM	NONE	NO	EMPTY	Yes
Ea ∘ Fn	MON	NONE	NO	NONE	No
Ea ∘ (	ATOM	COMP	NO	EMPTY	No
Fn (Feo[Fnm]	AMB	MON	NO	OM	No
Fn (Feo[Fnd]	AMB	DYA	NO	OD	No
Fn (Feo[⁑]	AMB	COMM	NO	COMM	No
Fn (Feo[∘]	AMB	COMP	NO	COMP	No
Fn (Feo[¨]	AMB	EACH	NO	EACH	No
Fn (Feo[.]	AMB	DOT	NO	DOT	No
Fn (Feo[⁑]	AMB	POW	NO	POW	No
Fn (Feo[/ ≠]	AMB	RED	YES	RED	No
Fn (Feo[\ ≀]	AMB	SCN	YES	SCN	No
Fn (Vf	AMB	FUNC	NO	A	Yes
Fn (Vo[Fnm]	AMB	MON	NO	OM	Yes
Fn (Vo[Fnd]	AMB	DYA	NO	OD	Yes
Fn (Vo[⁑]	AMB	COMM	NO	COMM	Yes
Fn (Vo[∘]	AMB	COMP	NO	COMP	Yes
Fn (Vo[¨]	AMB	EACH	NO	EACH	Yes

Sequence	Opnd	Oper	Axis	Nest	Tgt
Fn (Vo[.]	AMB	DOT	NO	DOT	Yes
Fn (Vo[⍣]	AMB	POW	NO	POW	Yes
Fn (Vo[/ ≠]	AMB	RED	YES	RED	Yes
Fn (Vo[\ ⍀]	AMB	SCN	YES	SCN	Yes
Fn (Vu	AMB	NONE	NO	EMPTY	Yes
Fn ∘ (	AMB	COMP	NO	EMPTY	No
Fn . (	AMB	DOT	NO	EMPTY	No
Fn \ [	MON	NONE	SEEN	NONE	No
Fn \ (	MON	NONE	NO	EMPTY	No
Fn \ ∘	MON	COMP	NO	NONE	No
Fn \ ⍣	MON	POW	NO	NONE	No
Da [E	DYA	NONE	FILD	NONE	No
Da (Feo[∘]	DYA	COMP	NO	COMP	No
Da (Feo[¨]	DYA	EACH	NO	EACH	No
Da (Feo[⍣]	DYA	POW	NO	POW	No
Da (Vf	DYA	FUNC	NO	A	Yes
Da (Vo[Fnm]	DYA	MON	NO	OM	Yes
Da (Vo[Fnd]	DYA	DYA	NO	OD	Yes
Da (Vo[⍨]	DYA	COMM	NO	COMM	Yes
Da (Vo[∘]	DYA	COMP	NO	COMP	Yes
Da (Vo[¨]	DYA	EACH	NO	EACH	Yes
Da (Vo[.]	DYA	DOT	NO	DOT	Yes
Da (Vo[⍣]	DYA	POW	NO	POW	Yes
Da (Vo[/ ≠]	DYA	RED	YES	RED	Yes
Da (Vo[\ ⍀]	DYA	SCN	YES	SCN	Yes
Da (Vu	DYA	NONE	NO	EMPTY	Yes
Da ∘ (	DYA	COMP	NO	EMPTY	No
Da ⍣ (	DYA	POW	NO	EMPTY	No
Ea Fnd (Fea	ATOM	DYA	NO	A	No
Ea Fnd (Vf	ATOM	DYA	NO	A	Yes
Ea Fnd (Vo	ATOM	DYA	NO	O	Yes
Ea Fnd (Vu	ATOM	DYA	NO	EMPTY	Yes
Ea ∘ (Fea	ATOM	COMP	NO	A	No

Sequence	Opnd	Oper	Axis	Nest	Tgt
Ea ∘ (Vf	ATOM	COMP	NO	A	Yes
Ea ∘ (Vo	ATOM	COMP	NO	O	Yes
Ea ∘ (Vu	ATOM	COMP	NO	EMPTY	Yes
Fn ∘ (Fea	AMB	COMP	NO	A	No
Fn ∘ (Vf	AMB	COMP	NO	A	Yes
Fn ∘ (Vo	AMB	COMP	NO	O	Yes
Fn ∘ (Vu	AMB	COMP	NO	EMPTY	Yes
Fn . (Fea	AMB	DOT	NO	A	No
Fn . (Vf	AMB	DOT	NO	A	Yes
Fn . (Vo	AMB	DOT	NO	O	Yes
Fn . (Vu	AMB	DOT	NO	EMPTY	Yes
Fn \ [E	MON	NONE	FILD	NONE	No
Fn \ (Feo[∘]	MON	COMP	NO	COMP	No
Fn \ (Feo[¨]	MON	EACH	NO	EACH	No
Fn \ (Feo[⍣]	MON	POW	NO	POW	No
Fn \ (Vf	MON	FUNC	NO	A	Yes
Fn \ (Vo[Fnm]	MON	MON	NO	OM	Yes
Fn \ (Vo[Fnd]	MON	DYA	NO	OD	Yes
Fn \ (Vo[⍨]	MON	COMM	NO	COMM	Yes
Fn \ (Vo[∘]	MON	COMP	NO	COMP	Yes
Fn \ (Vo[¨]	MON	EACH	NO	EACH	Yes
Fn \ (Vo[⍣]	MON	POW	NO	POW	Yes
Fn \ (Vo[.]	MON	DOT	NO	DOT	Yes
Fn \ (Vo[/]	MON	RED	YES	RED	Yes
Fn \ (Vo[\]	MON	SCN	YES	SCN	Yes
Fn \ (Vu	MON	NONE	NO	EMPTY	Yes
Fn \ ∘ (	MON	COMP	NO	EMPTY	No
Fn \ ⍣ (	MON	POW	NO	EMPTY	No
Da ∘ (Fea	DYA	COMP	NO	A	No
Da ∘ (Vf	DYA	COMP	NO	A	Yes
Da ∘ (Vo	DYA	COMP	NO	O	Yes
Da ∘ (Vu	DYA	COMP	NO	EMPTY	Yes
Da ⍣ (Fea	DYA	POW	NO	A	No

Sequence	Opnd	Oper	Axis	Nest	Tgt
Da ⁑ (Vf	DYA	POW	NO	A	Yes
Da ⁑ (Vo	DYA	POW	NO	O	Yes
Da ⁑ (Vu	DYA	POW	NO	EMPTY	Yes
Fn \ ∘ (Fea	MON	COMP	NO	A	No
Fn \ ∘ (Vf	MON	COMP	NO	A	Yes
Fn \ ∘ (Vo	MON	COMP	NO	O	Yes
Fn \ ∘ (Vu	MON	COMP	NO	EMPTY	Yes
Fn \ ⁑ (Fea	MON	POW	NO	A	No
Fn \ ⁑ (Vf	MON	POW	NO	A	Yes
Fn \ ⁑ (Vo	MON	POW	NO	O	Yes
Fn \ ⁑ (Vu	MON	POW	NO	EMPTY	Yes

Specification Functions

The specifications that we will use are based directly off of the properties that are used above. This is because these functions and properties are of specific but limited use going forward. The main use they have is to collapse the prior effort into a stimuli oriented table, rather than a sequence oriented table, and to flatten out the recursions so that it is not necessary to have the recursive stimuli in the black box specification.

An intential reduction in the precision is given here by omitting the definitions of the specification functions. Normally, this would signal a serious problem given the nature of the state-box specification. However, since we are not going to be using a state-box specification in the normal fashion, we will not be losing much here, and we will encode the appropriate behaviors through recursion in the clear-box development.

Additionally, there is an implicit possibility for each of the specification functions to have no readily useful value in some of the contexts, so we will just omit their mention when the contribute nothing to the specification.

There is one additional specification function that is not defined by the properties above. The `Context` specification function gives a set of possible recursive stimuli that are accepted at this point, indicating the contexts that could be used. This return of a set of values instead of a single value distinguishes it slightly from the other functions, which return only single states.

Table 210. Specification Functions and Ranges

Function Name	Possible Values
Context	Top, Func, Expr, Fnex
Fix	Yes, No
Obj	Yes, No
Namespace	NOTSEEN, OPEN, CLOSED
Eot	Yes, No
Value	UNBOUND, EXPR, FUNC, EMPTY, FVAR
Named	MAYBE, BOUND, UNBOUND, NO
Bracket	Yes, No
Cond	Yes, No
Bind	NO, BOUND, UNBOUND
Nest	NONE, PAREN, BRACKET, EBRACK, RBRACK
Class	ATOM, FUNC, SELECT
Last Seen	EMPTY, LIT, VAR, NVAR, UVAR, MIXED, EXPR, SELEX
Opnd	ATOM, AMB, NONE, JOT, MON, DYA
Oper	NONE, DOT, COMP, POW, ANY, EACH, MON, DYA, RED, FUNC, COMM, SCN
Axis	NO, YES, SEEN, FILD
Nest	NONE, EMPTY, A, AA, M, MA, D, DA, O, OM, OD, COMM, COMP, EACH, POW, DOT, RED, SCN
Target	Yes, No

Black Box Definitions

The black-box definition is a completely specification at the stimuli level of the behavior of the system based on external stimuli and responses documented in the previous sections. In particular, there is a table for each possible stimuli that can enter the system and a row in each table for the different possible responses. Traces indicate the where and why of requirements that determins this behavior.

Table 211. Black Box Definition: {

Conditions	Response	Trace
Context ∈ Top Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Func Bracket ∈ No	wait	4

Conditions	Response	Trace
Context ∈ Func Bracket ∈ Yes	SYNTAX ERROR	4, 10

Table 212. Black Box Definition: }

Conditions	Response	Trace
Context ∈ Top Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EXPR FUNC	okay	4
Context ∈ Func Bind ∈ NO Value ∈ EMPTY	okay	4
Context ∈ Func Bind ∈ BOUND Value ∈ FVAR FUNC	okay	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ UNBOUND	VALUE ERROR	4, 10
Context ∈ Func Bind ∈ NO Value ∈ FVAR	SYNTAX ERROR	4, 10
Context ∈ Func Bind ∈ BOUND UNBOUND Value ∈ EMPTY	SYNTAX ERROR	4, 10

Table 213. Black Box Definition: [

Conditions	Response	Trace
Context ∈ Top Func	SYNTAX ERROR	4, 10
Context ∈ Fnex Axis ∈ Yes Nest ∈ NONE	wait	4
Context ∈ Fnex Axis ∈ NO SEEN FILD	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Expr Last Seen ∈ LIT VAR NVAR	wait	4

Conditions	Response	Trace
Context ∈ Expr Last Seen ∈ UVAR MIXED	VALUE ERROR	4, 5, 10
Context ∈ Expr Last Seen ∈ EMPTY EXPR SELEX	SYNTAX ERROR	4, 10

Table 214. Black Box Definition:]

Conditions	Response	Trace
Context ∈ Top Func	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ BRACKET EBRACK ~Class ∈ SELECT	okay	4
Context ∈ Expr Nest ∈ BRACKET EBRACK Class ∈ SELECT	selective	4
Context ∈ Expr ~Nest ∈ BRACKET EBRACK	SYNTAX ERROR	4, 10
Context ∈ Fnex Axis ∈ FILD Opnd ∈ DYA	dyadic	4
Context ∈ Fnex Axis ∈ FILD Opnd ∈ MON	monadic	4
Context ∈ Fnex ~Axis ∈ FILD	SYNTAX ERROR	4, 10

Table 215. Black Box Definition: (

Conditions	Response	Trace
Context ∈ Top Func	SYNTAX ERROR	4, 10
Context ∈ Expr Last Seen ∈ UVAR MIXED	VALUE ERROR	4, 5, 10
Context ∈ Expr ~Last Seen ∈ UVAR MIXED Nest ∈ NONE RBRACK	wait	4
Context ∈ Fnex Axis ∈ NO YES Nest ∈ NONE ~Opnd ∈ JOT ~Oper ∈ MON	wait	4

Conditions	Response	Trace
Context ∈ Fnex Axis ∈ NO YES Nest ∈ NONE Oper ∈ MON	SYNTAX ERROR	4, 10
Context ∈ Fnex Axis ∈ NO YES Nest ∈ NONE Opnd ∈ JOT	SYNTAX ERROR	4, 10

Table 216. Black Box Definition:)

Conditions	Response	Trace
Context ∈ Top Func	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ PAREN Last Seen ∈ EXPR Class ∈ ATOM	atomic	4
Context ∈ Expr Nest ∈ PAREN Last Seen ∈ SELEX Class ∈ ATOM	atomic, selective	4
Context ∈ Expr Nest ∈ PAREN Last Seen ∈ SELEX Class ∈ SELECT	selective	4
Context ∈ Expr Nest ∈ PAREN Last Seen ∈ EXPR Class ∈ SELECT	okay	4
Context ∈ Expr Nest ∈ PAREN Last Seen ∈ EXPR SELEX Class ∈ FUNC	okay	4
Context ∈ Expr Nest ∈ NONE RBRACK	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ PAREN ~Last Seen ∈ EXPR SELEX	SYNTAX ERROR	4, 10
Context ∈ Fnex Nest ∈ A OM	ambivalent	4

Conditions	Response	Trace
Oper ∈ NONE MON DYA		
Context ∈ Fnex Nest ∈ COMM Opnd ∈ AMB DYA	ambivalent	4
Context ∈ Fnex Nest ∈ EACH Opnd ∈ AMB	ambivalent	4
Context ∈ Fnex Nest ∈ EACH Opnd ∈ DYA	dyadic	4
Context ∈ Fnex Nest ∈ EACH Opnd ∈ MON	monadic	4
Context ∈ Fnex Nest ∈ A Oper ∈ COMP Opnd ∈ AMB	ambivalent	4
Context ∈ Fnex Nest ∈ A Oper ∈ COMP POW Opnd ∈ DYA	dyadic	4
Context ∈ Fnex Nest ∈ A Oper ∈ COMP POW Opnd ∈ ATOM MON	monadic	4
Context ∈ Fnex Nest ∈ A Oper ∈ DOT	dyadic	4
Context ∈ Fnex Nest ∈ AA RED	ambivalent axis	4
Context ∈ Fnex Nest ∈ D Oper ∈ NONE	dyadic	4
Context ∈ Fnex Nest ∈ DA Oper ∈ NONE	dyadic axis	4
Context ∈ Fnex Nest ∈ M Oper ∈ NONE	monadic	4

Conditions	Response	Trace
Context ∈ Fnex Nest ∈ MA SCN Oper ∈ NONE SCN	monadic axis	4
Context ∈ Fnex Oper ∈ ANY	oper[op]	4
Context ∈ Fnex Nest ∈ EMPTY Tgt ∈ Yes	VALUE ERROR	4, 10
Context ∈ Fnex Nest ∈ EMPTY Tgt ∈ No	SYNTAX ERROR	4, 10
Context ∈ Fnex Nest ∈ OD COMP DOT POW	wait	4
Context ∈ Fnex Oper ∈ FUNC	SYNTAX ERROR	4, 10
Context ∈ Fnex Nest ∈ O NONE	SYNTAX ERROR	4, 10

Table 217. Black Box Definition: ;

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ BRACKET EBRACK	wait	4
Context ∈ Expr Nest ∈ NONE PAREN RBRACK	SYNTAX ERROR	4, 10

Table 218. Black Box Definition: : or ::

Conditions	Response	Trace
Context ∈ Top Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EXPR Cond ∈ No	wait	4
Context ∈ Func Value ∈ UNBOUND	VALUE ERROR	4, 10
Context ∈ Func ~Value ∈ EXPR UNBOUND	SYNTAX ERROR	4, 10
Context ∈ Func	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Value ∈ EXPR Cond ∈ Yes		

Table 219. Black Box Definition: ◊

Conditions	Response	Trace
Context ∈ Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EXPR FUNC	null	4
Context ∈ Top Func Value ∈ UNBOUND	VALUE ERROR	4, 10
Context ∈ Top Value ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EXPR	wait	4
Context ∈ Func Value ∈ EMPTY Bind ∈ NO	wait	4
Context ∈ Func Value ∈ FUNC FVAR Bind ∈ BOUND UNBOUND	wait	4
Context ∈ Func Value ∈ FVAR Bind ∈ NO	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Bind ∈ BOUND UNBOUND	SYNTAX ERROR	4, 10

Table 220. Black Box Definition: ←

Conditions	Response	Trace
Context ∈ Top Named ∈ MAYBE	null	4
Context ∈ Top Named ∈ BOUND Value ∈ UNBOUND	null	4
Context ∈ Top Named ∈ BOUND ~Value ∈ UNBOUND	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Top ~Named ∈ BOUND MAYBE	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ UNBOUND FVAR	wait	4
Context ∈ Func ~Value ∈ UNBOUND FVAR	SYNTAX ERROR	4, 10
Context ∈ Expr Last Seen ∈ VAR NVAR UVAR Nest ∈ NONE RBRACK	wait	4
Context ∈ Expr ~Last Seen ∈ VAR NVAR UVAR	SYNTAX ERROR	4, 10
Context ∈ Fnex Tgt ∈ Yes	wait	4
Context ∈ Fnex Tgt ∈ No	SYNTAX ERROR	4, 10

Table 221. Black Box Definition: ⁖

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ AMB DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ JOT MON ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[⁖]	4

Table 222. Black Box Definition: ∘

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[∘]	4
Context ∈ Fnex ~Opnd ∈ NONE Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait	4

Table 223. Black Box Definition: ¨

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ JOT ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[¨]	4
Context ∈ Fnex Opnd ∈ AMB Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ MON	monadic	4

Conditions	Response	Trace
Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE		
Context ∈ Fnex Opnd ∈ DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	dyadic	4

Table 224. Black Box Definition: .

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[.]	4
Context ∈ Fnex Opnd ∈ AMB JOT MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait	4

Table 225. Black Box Definition: ⍣

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Fnex Opnd ∈ JOT ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[⁕]	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait	4

Table 226. Black Box Definition: /

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent axis	4

Table 227. Black Box Definition: ≠

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent axis	4

Table 228. Black Box Definition: \

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA	monadic axis	4

Conditions	Response	Trace
Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE		

Table 229. Black Box Definition: ⍀

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	monadic axis	4

Table 230. Black Box Definition: Break

Conditions	Response	Trace
	Interrupt	D3

Table 231. Black Box Definition: D

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Fnex ~Opnd ∈ ATOM Oper ∈ COMP Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic	4
Context ∈ Fnex Oper ∈ DYA Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ ATOM Oper ∈ COMP Nest ∈ NONE	monadic	4
Context ∈ Fnex Oper ∈ DOT Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ POW Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ MON Oper ∈ POW Nest ∈ NONE	monadic	4

Table 232. Black Box Definition: Da

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Opnd ∈ ATOM Oper ∈ COMP Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex	dyadic axis	4

Conditions	Response	Trace
Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE		
Context ∈ Fnex Oper ∈ DYA Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ ATOM Oper ∈ COMP Nest ∈ NONE	monadic	4
Context ∈ Fnex Oper ∈ DOT Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ POW Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ MON Oper ∈ POW Nest ∈ NONE	monadic	4

Table 233. Black Box Definition: Eot

Conditions	Response	Trace
Context ∈ Func Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ CLOSED Eot ∈ No	null	4
Context ∈ Top ~Namespace ∈ CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top ~Eot ∈ No	SYNTAX ERROR	4, 10

Table 234. Black Box Definition: Fix

Conditions	Response	Trace
Context ∈ Top Fix ∈ No	null	4

Table 235. Black Box Definition: Fnb

Conditions	Response	Trace
Context ∈ Top Namespace ∈ NOTSEEN	DOMAIN ERROR	D2

Table 236. Black Box Definition: Fne

Conditions	Response	Trace
Context ∈ Top Namespace ∈ NOTSEEN	null	17, 21

Table 237. Black Box Definition: Fnf

Conditions	Response	Trace
Context ∈ Top Namespace ∈ NOTSEEN	FILE NAME ERROR	30

Table 238. Black Box Definition: Lle

Conditions	Response	Trace
Context ∈ Top Namespace ∈ CLOSED Eot ∈ Yes	INTERNAL ERROR	D4

Table 239. Black Box Definition: Lls

Conditions	Response	Trace
Context ∈ Top Namespace ∈ CLOSED Eot ∈ Yes	Namespace	4, 16, 21

Table 240. Black Box Definition: M

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	monadic	4

Conditions	Response	Trace
Context ∈ Fnex Oper ∈ DYA Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ ATOM MON Oper ∈ COMP Nest ∈ NONE	monadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ COMP Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ AMB Oper ∈ COMP Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Oper ∈ DOT Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ POW Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ MON Oper ∈ POW Nest ∈ NONE	monadic	4

Table 241. Black Box Definition: Ma

Conditions	Response	Trace
Context ∈ Top Func Expr	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	monadic axis	4
Context ∈ Fnex	ambivalent	4

Conditions	Response	Trace
Oper ∈ DYA Nest ∈ NONE		
Context ∈ Fnex Opnd ∈ ATOM MON Oper ∈ COMP Nest ∈ NONE	monadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ COMP Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ AMB Oper ∈ COMP Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Oper ∈ DOT Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ POW Nest ∈ NONE	dyadic	4
Context ∈ Fnex Opnd ∈ MON Oper ∈ POW Nest ∈ NONE	monadic	4

Table 242. Black Box Definition: N and S

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ NONE Class ∈ ATOM Last Seen ∈ LIT VAR NVAR	atomic	4
Context ∈ Expr Nest ∈ NONE Class ∈ SELECT FUNC	okay	4
Context ∈ Expr Nest ∈ NONE Last Seen ∈ UVAR MIXED	VALUE ERROR	4, 10

Conditions	Response	Trace
Context ∈ Expr Nest ∈ RBRACK	okay	4

Table 243. Black Box Definition: Nl

Conditions	Response	Trace
Context ∈ Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EXPR FUNC	null	4
Context ∈ Top Value ∈ EMPTY Named ∈ NO	null	4
Context ∈ Top Value ∈ EMPTY Named ∈ BOUND UN-BOUND	SYNTAX ERROR	4, 10
Context ∈ Top Func Value ∈ UNBOUND	VALUE ERROR	4, 10, 16, 21
Context ∈ Func Value ∈ EXPR	wait	4
Context ∈ Func Value ∈ EMPTY Bind ∈ NO	wait	4
Context ∈ Func Value ∈ FUNC FVAR Bind ∈ BOUND UNBOUND	wait	4
Context ∈ Func Value ∈ FVAR Bind ∈ NO	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Bind ∈ BOUND UNBOUND	SYNTAX ERROR	4, 10

Table 244. Black Box Definition: Nse

Conditions	Response	Trace
Context ∈ Func Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Top Value ∈ EXPR FUNC	null	4
Context ∈ Top Value ∈ EMPTY Named ∈ NO	null	4
Context ∈ Top Value ∈ UNBOUND	VALUE ERROR	4, 10, 16, 21
Context ∈ Top Value ∈ EMPTY Named ∈ BOUND UN-BOUND	SYNTAX ERROR	4, 10

Table 245. Black Box Definition: Nss

Conditions	Response	Trace
Context ∈ Func Expr Fnex	SYNTAX ERROR	4, 10
Context ∈ Top ~Namespace ∈ NOTSEEN	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN	null	4

Table 246. Black Box Definition: Sm

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Last Seen ∈ UVAR MIXED	VALUE ERROR	4, 10
Context ∈ Expr Nest ∈ NONE RBRACK Last Seen ∈ EMPTY LIT VAR NVAR	wait	4

Table 247. Black Box Definition: Sd

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Last Seen ∈ UVAR MIXED	VALUE ERROR	4, 10
Context ∈ Expr Nest ∈ NONE RBRACK	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Last Seen ∈ EMPTY		
Context ∈ Expr Nest ∈ NONE RBRACK Last Seen ∈ LIT VAR NVAR	wait	4

Table 248. Black Box Definition: Va

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ NONE Class ∈ FUNC Last Seen ∈ EMPTY LIT	okay	4
Context ∈ Expr Nest ∈ RBRACK	okay	4
Context ∈ Expr Nest ∈ NONE Class ∈ ATOM Last Seen ∈ LIT EMPTY	atomic	4
Context ∈ Expr Nest ∈ NONE Class ∈ SELECT Last Seen ∈ EMPTY	selective	4
Context ∈ Expr Nest ∈ NONE Class ∈ SELECT Last Seen ∈ LIT	okay	4

Table 249. Black Box Definition: Vna

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ NONE Class ∈ FUNC SELECT Last Seen ∈ EMPTY LIT	okay	4
Context ∈ Expr Nest ∈ RBRACK	okay	4
Context ∈ Expr Nest ∈ NONE	atomic	4

Conditions	Response	Trace
Class ∈ ATOM Last Seen ∈ LIT EMPTY		

Table 250. Black Box Definition: Vi

Conditions	Response	Trace
Context ∈ Func	SYNTAX ERROR	4, 10
Context ∈ Expr Fnex Nest ∈ NONE	VALUE ERROR	4, 10
Context ∈ Top Value ∈ NONE	SYNTAX ERROR	4, 10

Table 251. Black Box Definition: Vf

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Opnd ∈ NONE AMB Oper ∈ NONE DYA COMP Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ ATOM AMB JOT DYA MON Oper ∈ NONE MON Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Nest ∈ EMPTY	wait	4
Context ∈ Fnex Opnd ∈ ATOM MON Oper ∈ COMP Nest ∈ NONE	monadic	4
Context ∈ Fnex	dyadic	4

Conditions	Response	Trace
Opnd ∈ DYA Oper ∈ COMP POW Nest ∈ NONE		
Context ∈ Fnex Oper ∈ DOT Nest ∈ NONE	dyadic	4

Table 252. Black Box Definition: Vo[Fnm]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[Fnm]	4
Context ∈ Fnex Opnd ∈ ATOM AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent	4

Table 253. Black Box Definition: Vo[Fnd]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[Fnd]	4
Context ∈ Fnex Opnd ∈ ATOM AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait	4

Table 254. Black Box Definition: Vo[¨~]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top	null	4

Conditions	Response	Trace
Value ∈ EMPTY		
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex Opnd ∈ AMB DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ JOT MON ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[⍨]	4

Table 255. Black Box Definition: Vo[∘]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4

Conditions	Response	Trace
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[∘]	4
Context ∈ Fnex ~Opnd ∈ NONE Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait	4

Table 256. Black Box Definition: Vo[¨]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ JOT ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[¨]	4
Context ∈ Fnex Opnd ∈ AMB Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent	4
Context ∈ Fnex Opnd ∈ MON Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	monadic	4
Context ∈ Fnex Opnd ∈ DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	dyadic	4

Table 257. Black Box Definition: Vo[.]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Opnd ∈ ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE		
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	oper[.]	4
Context ∈ Fnex Opnd ∈ AMB JOT MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait	4

Table 258. Black Box Definition: Vo[⁖]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ JOT ATOM Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE	oper[⁖]	4

Conditions	Response	Trace
Oper ∈ NONE Nest ∈ NONE		
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	wait 4	

Table 259. Black Box Definition: Vo[/]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES	ambivalent axis	4

Conditions	Response	Trace
Nest ∈ NONE		

Table 260. Black Box Definition: Vo[⌿]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	ambivalent axis	4

Table 261. Black Box Definition: Vo[\]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	monadic axis	4

Table 262. Black Box Definition: Vo[⍀]

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Bracket ∈ No		
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ EMPTY	wait	4, D5
Context ∈ Fnex ~Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ ATOM JOT Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Opnd ∈ NONE Oper ∈ NONE Nest ∈ NONE	dyadic axis	4
Context ∈ Fnex Opnd ∈ AMB MON DYA Oper ∈ NONE Axis ∈ NO YES Nest ∈ NONE	monadic axis	4

Table 263. Black Box Definition: Vnu

Conditions	Response	Trace
Context ∈ Top Func Fnex	SYNTAX ERROR	4, 10
Context ∈ Expr Nest ∈ NONE Class ∈ ATOM FUNC SELECT Last Seen ∈ EMPTY LIT	wait	4
Context ∈ Expr Nest ∈ RBRACK	wait	4

Table 264. Black Box Definition: Vu

Conditions	Response	Trace
Context ∈ Expr	SYNTAX ERROR	4, 10

Conditions	Response	Trace
Context ∈ Top Namespace ∈ NOTSEEN CLOSED	SYNTAX ERROR	4, 10
Context ∈ Top Value ∈ EMPTY	null	4
Context ∈ Func Bracket ∈ No	SYNTAX ERROR	4, 10
Context ∈ Func Value ∈ EMPTY Cond ∈ No	wait	4
Context ∈ Fnex Nest ∈ NONE ~Oper ∈ MON	VALUE ERROR	4, 10
Context ∈ Fnex Oper ∈ MON Nest ∈ NONE	SYNTAX ERROR	4, 10
Context ∈ Fnex Nest ∈ EMPTY	wait	4