

You can declare local variables anywhere in the function after the parameter declarations.

Body Code

This table shows what can appear in body code of a function.

What	Allowed in Functions?	Comment
Assignment statements	Yes	Includes wave, variable and string assignments.
Built-in operations	Yes, with a few exceptions.	See Operations in Functions on page IV-111 for exceptions.
Calls to user functions	Yes	
Calls to macros	No	
External functions	Yes	
External operations	Yes, with exceptions.	

Statements are limited to 2500 bytes per line except for assignment statements which, in Igor Pro 7 or later, can be continued on subsequent lines.

Line Continuation

In user-defined functions in Igor Pro 7 or later, you can use arbitrarily long expressions by including a line continuation character at the very end of a line. The line continuation character is backslash. For example:

```
Function Example1(double v1)
    return v1 + \
    2
End
```

Line continuation is supported for any numeric or string expression in a user-defined function. Here is an example using a string expression:

```
Function/S Example2(string s1)
    return s1 + \
        " " + \
        "there"
End
```

Line continuation is supported for numeric and string expressions only. It is not supported on other types of commands. For example, this generates a compile error:

```
Function Example3(double v1)
    Make wave0      \
        wave1
End
```

The Return Statement

A return statement often appears at the end of a function, but it can appear anywhere in the function body. You can also have more than one return statement.

The return statement immediately stops executing the function and returns a value to the calling function. The type of the returned value must agree with the type declared in the function declaration.

If there is no return statement, or if a function ends without hitting a return statement, then the function returns the value NaN (Not a Number) for numeric functions and null for other types of functions. If the calling function attempts to use the null value, Igor reports an error.