**Syntax**

```plaintext
real matrix  strtoreal(string matrix S)
real scalar   _strtoreal(string matrix S, R)
```

**Description**

`strtoreal(S)` returns `S` converted to real. Elements of `S` that cannot be converted are returned as . (missing value).

`_strtoreal(S, R)` does the same as above—it returns the converted values in `R`—and it returns the number of elements that could not be converted. In such cases, the corresponding value of `R` contains . (missing).

**Remarks and examples**

```plaintext
strtoreal("1.5") returns (numeric) 1.5.
strtoreal("-2.5e+1") returns (numeric) -25.
strtoreal("not a number") returns (numeric) . (missing).
```

Typically, `strtoreal(S)` and `_strtoreal(S, R)` are used with scalars, but if applied to a vector or matrix `S`, element-by-element results are returned.

In performing the conversion, leading and trailing blanks are ignored: "1.5" and " 1.5 " both convert to (numeric) 1.5, but "1.5 kilometers" converts to . (missing). Use `strtoreal(tokens(S)[1])` to convert just the first space-delimited part.

All Stata numeric formats are understood, such as 0, 1, −2, 1.5, 1.5e+2, and −1.0x+8, as well as the missing-value codes ., .a, .b, . . . , .z.

Thus using `strtoreal(S)`, if an element of `S` converts to . (missing), you cannot tell whether the element was valid and equal to "." or the element was invalid and so defaulted to . (missing), such as if `S` contained "cat" or "dog" or "1.5 kilometers".

When it is important to distinguish between these cases, use `_strtoreal(S, R)`. The conversion is returned in `R` and the function returns the number of elements that were invalid. If `_strtoreal()` returns 0, then all values were valid.
Conformability

\texttt{strtoreal(S)}:
\begin{itemize}
  \item \textit{input:} \quad S: \quad r \times c
  \item \textit{output:} \quad \texttt{result}: \quad r \times c
\end{itemize}

\texttt{strtoreal(S,R)}:
\begin{itemize}
  \item \textit{input:} \quad S: \quad r \times c
  \item \textit{output:} \quad R: \quad r \times c
  \item \texttt{result}: \quad 1 \times 1
\end{itemize}

Diagnostics

\texttt{strtoreal(S)} returns a missing value wherever an element of \textit{S} cannot be converted to a number.

\texttt{strtoreal(S,R)} does the same, but the result is returned in \textit{R}.

Also see

[M-5] \texttt{strofreal} — Convert real to string

[M-4] \texttt{string} — String manipulation functions