[6.29] Dirac's delta (impulse) and Heaviside (step) functions

Neither of these two functions are built in to the 89/92+, but both are easily defined. Dirac's delta function, also called the impulse function, is defined as

$$\delta(x) = \left\{ \begin{array}{l} 0 \text{ when } x \neq 0 \\ \infty \text{ when } x = 0 \end{array} \right\}$$

This can be defined as a function with

```
Define delta(x)=when(x=Ø,∞,Ø)
```

The Heaviside step function is usually defined as

$$H(x) = \left\{ \begin{array}{l} 0 \text{ for } x < 0 \\ 1 \text{ for } x > 0 \end{array} \right\}$$

This is defined as a function with

```
Define H(x)=when(x<Ø,Ø,when(x=Ø,undef,1))
```

Sometimes the Heaviside function is defined as

$$H(x) = \left\{ \begin{array}{l} 0 \text{ for } x < 0 \\ \frac{1}{2} \text{ for } x = 0 \\ 1 \text{ for } x > 0 \end{array} \right\}$$

The function definition for this case is

```
Define H(x)=when(x<Ø,Ø,when(x=Ø,1/2,1))
```