TABLE 4.1
Special symbols

Function	Notation	
Rectangle	$\Pi(x) = \begin{cases} 1 & \lvert x\rvert < \frac{1}{2} \\ 0 & \lvert x\rvert > \frac{1}{2} \end{cases}$	
Triangle	$\Lambda(x) = \begin{cases} 1-\lvert x\rvert & \lvert x\rvert < 1 \\ 0 & \lvert x\rvert > 1 \end{cases}$	
Heaviside unit step	$H(x) = \begin{cases} 0 & x > 0 \\ 0 & x < 0 \end{cases}$	
Sign (signum)	$\operatorname{sgn} x = \begin{cases} 1 & x > 0 \\ -1 & x < 0 \end{cases}$	
Impulse symbol*	$\delta(x)$	
Sampling or replicating symbol*	$\mathrm{III}(x) = \sum_{-\infty}^{\infty} \delta(x - n)$	
Even impulse pair	$\mathbf{II}(x) = \frac{1}{2}\delta(x + \frac{1}{2}) + \frac{1}{2}\delta(x - \frac{1}{2})$	
Odd impulse pair	$\mathbf{I_I}(x) = \frac{1}{2}\delta(x + \frac{1}{2}) - \frac{1}{2}\delta(x - \frac{1}{2})$	
Filtering or interpolating	$\operatorname{sinc} x = \dfrac{\sin \pi x}{\pi x}$	
Jinc function	$\operatorname{jinc} x = \dfrac{J_1(\pi x)}{2x}$	
Asterisk notation for convolution	$f(x) * g(x) \triangleq \int_{-\infty}^{\infty} f(u)g(x - u)\, du$	(p. 24)
Asterisk notation for serial products	$\{f_i\} * \{g_i\} \triangleq \sum_j f_j g_{i-j}$	(p. 31)
Pentagram notation	$f(x) \bigstar g(x) \triangleq \int_{-\infty}^{\infty} f(u)g(x + u)\, du$	(p. 40)
Various two-dimensional functions	$^2\Pi(x,y) = \Pi(x)\Pi(y)$ $^2\delta(x,y) = \delta(x)\,\delta(y)$ $^2\mathrm{III}(x,y) = \mathrm{III}(x)\mathrm{III}(y)$ $^2\operatorname{sinc}(x,y) = \operatorname{sinc} x \operatorname{sinc} y$	

*See Chapter 5.

Sometimes a complex function may be shown to advantage by plotting its modulus and phase, as in Fig. 4.19. Another method is to show a three-dimensional diagram (see Fig. 4.20), and a third method is to show a locus on the complex plane (see Fig. 4.21).

SUMMARY OF SPECIAL SYMBOLS

A small number of special symbols which are used extensively throughout this work are summarized in Table 4.1 and in Fig. 4.22 for reference.

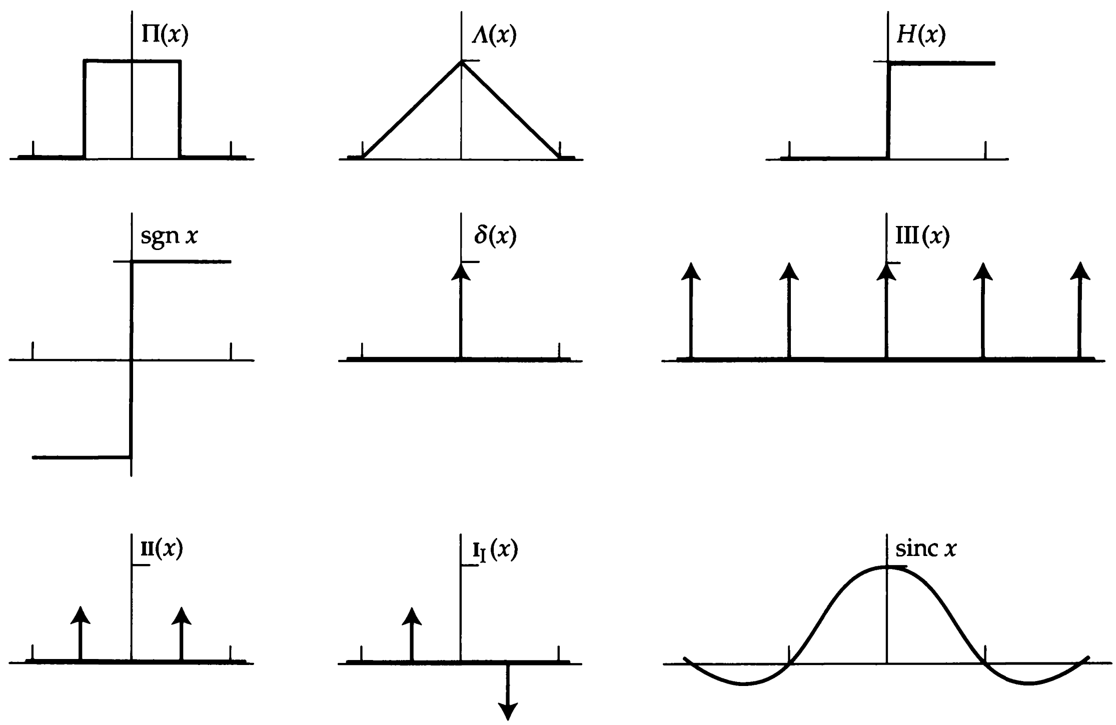

Fig. 4.22 **Summary of special symbols.**

BIBLIOGRAPHY

Woodward, P. M.: "Probability and Information Theory with Applications to Radar," McGraw-Hill Book Company, New York, 1953.