$$|x| = \begin{cases} x, & \text{for } x \geq 0 \quad (1) \\ -x, & \text{for } x < 0 \quad (2) \end{cases}$$

Another example is calculating the square root of $c + id$. First compute

$$w \equiv \begin{cases} 0 & c = d = 0 \quad (3a) \\ \sqrt{|c|}\sqrt{\dfrac{1+\sqrt{1+(d/c)^2}}{2}} & |c| \geq |d| \quad (3b) \\ \sqrt{|d|}\sqrt{\dfrac{|c/d|+\sqrt{1+(c/d)^2}}{2}} & |c| < |d| \quad (3c) \end{cases}$$

Then, using w from eq. (3), the square root is

$$\sqrt{c+id} = \begin{cases} 0 & w = 0 \text{ (case 3a)} \quad (4a) \\ w + i\dfrac{d}{2w} & w \neq 0,\ c \geq 0 \quad (4b) \\ \dfrac{|d|}{2w} + iw & w \neq 0,\ c < 0,\ d \geq 0 \quad (4c) \\ \dfrac{|d|}{2w} - iw & w \neq 0,\ c < 0,\ d < 0 \quad (4d) \end{cases}$$