Answer on Question #62974 – Math – Algebra

Question

$y=\sqrt{x^2-2x+1}$

Solution

$x^2-2x+1=(x-1)^2 \Rightarrow x^2-2x+1\geq 0$ for every $x\in R$;

$$y=\sqrt{x^2-2x+1}=\sqrt{(x-1)^2}=|x-1|.$$

$$y=|x-1| \Leftrightarrow y=\begin{cases} x-1, if\ x\geq 1, \\ 1-x, if\ x<1. \end{cases}$$