

Sarah's question S1.6 #3

Let $(x, y) = (x, \sqrt{x})$ be a point on $y = \sqrt{x}$'s graph. Then the distance from (x, y) to $(3, 0)$ is

$$\begin{aligned} \sqrt{(x-3)^2 + (y-0)^2} &= \sqrt{(x-3)^2 + (\sqrt{x})^2} \\ &= \sqrt{x^2 - 6x + 9 + x} = \sqrt{x^2 - 5x + 9} \end{aligned}$$

