

Problem: (#28, pg. 25) Convert the parametric equations into equations of a curve in rectangular form:

$$\begin{cases} x = \sqrt{t}, & (i) \\ y = 2t + 4, & (ii) \end{cases}$$

Solution: Solve (ii) for t to get $t = \frac{y-4}{2}$. Plug this t into (i) to get $x = \sqrt{\frac{y-4}{2}}$. This completes the problem.

NOTE You can also do this a different way: solve (i) for t to get $t = x^2$ and plug this into (ii) to get $y = 2x^2 + 4$. This answer is equivalent! To see that, solve it for x . To do this we get to $x^2 = \frac{y-4}{2}$ and when we take square roots we must consider \pm : $x = \pm\sqrt{\frac{y-4}{2}}$ and we must take the + solution here, giving us the equation we got the first time.