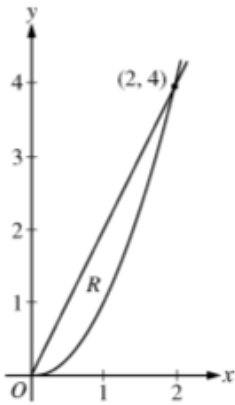Let R be the region in the first quadrant enclosed by the graphs of $y = 2x$ and $y = x^2$, as shown in the figure.

a.   Find the area of R.   b.   Find the perimeter of the region R.