Directions: Sketch the region in the $xy$-plane that is bounded by the given equations. Then find the area of the region.

1. $y = 4\sqrt{x}$, $y = 0$, and $x = 1$
2. $y = x^2$, $y = 0$, $x = 1$, and $x = 2$
3. $y = 9 - x^2$, $y = 0$, $x = 1$, and $x = 2$
4. $y = (1 - x)(x - 3)$, $y = 0$