

The radius of the sphere is the distance between $(4, 3, -1)$ and $(1, 8, 1)$:
 $r = \sqrt{(1 - 4)^2 + (8 - 3)^2 + [1 - (-1)]^2} = \sqrt{38}$. Thus, an equation of the sphere is $(x - 1)^2 + (y - 8)^2 + (z - 1)^2 = 38$.