

NAME (print): \_\_\_\_\_

**No credit for unsupported answers will be given. Clearly indicate your final answer.**

1. *[10 pts.]* A lamina occupies the region inside the cardioid  $r = 1 + \sin \theta$  and outside the circle  $r = 1$ . Find the center of mass if the density at any point is inversely proportional to its distance from the origin.