1) Consider the curve with parametric equation

$$x = 1 + \frac{1}{t^2}, y = 1 - \frac{1}{t^3}, 0 \leq t \leq 10.$$

Determine the equation of the tangent line to this curve at $(\frac{5}{4}, \frac{7}{8})$.

2) Set up BUT DO NOT EVALUATE the integral to determine the area outside the circle $r = 2\cos\theta$ and inside the cardioid $r = 1 + \cos\theta$. You should draw the polar graphs first.