

We could evaluate this integral by multiplying and dividing the integrand by $\sqrt{2 - 2 \sin \theta}$, or we could use a computer algebra system. In any event, we find that the length of the cardioid is $L = 8$. □

10.5 Exercises

1. Find the area of the region that is bounded by the given

2. Find the area of the region that lies inside the first curve

51-52 Use a calculator or computer to find the length of the loop

(where f' is continuous and $0 < a < b < \infty$) about the