1. Find the area inside the region bounded by $r = 3 + 3\sin\theta$.

2. Consider the curves $r = 1 + \sin\theta$ and $r = 3\sin\theta$.

   (a) Sketch the curves.

   (b) Find the values of θ where the curves intersect.

   (c) Find the area of the region inside both curves.

   (d) Find the area of the region inside $r = 3\sin\theta$ and outside $r = 1 + \sin\theta$.

3. Consider the curve $r = 2\csc\theta$.

   (a) Convert this curve into rectangular coordinates. This will give us a parametrization with θ serving the role of t.

   (b) What is the slope of the curve at any point (x, y)?

   (c) Find the length of the curve from $\theta = \pi/6$ to $\theta = \pi/2$.

4. Find the arclength of the cardioid $r = 3 + 3\sin\theta$.