

Goal Compute areas defined by polar curves.

Reference: §10.4

1. Find the Area enclosed by $r = 1 - \sin \theta$.
2. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #1.
3. Find the Area inside $r = 4 \sin \theta$ and outside $r = 2$
4. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #3.
5. Find the Area inside $r = 3 \cos \theta$ and outside $r = 1 + \cos \theta$
6. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #5.
7. Find the Area of the region that lies inside both curves $r = 1 + \cos \theta$ and $r = 1 - \cos \theta$.
8. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #7.
9. Find the Area of the region that lies inside both curves $r = 3 + 2 \cos \theta$ and $r = 3 + 2 \sin \theta$. Use the Cartesian coordinate plot to help sketch the Polar curves.
10. Set-Up but **DO NOT EVALUATE** another slightly different Integral representing the same area of the described bounded region in #9.