

Math 1710: Tutorial 11 – Answers.

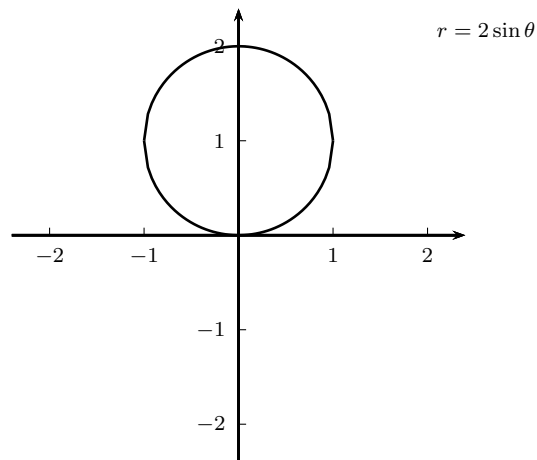
1. (a) $2(2^{3/2} - 1)$

(b) $e^3 - e^{-3}$

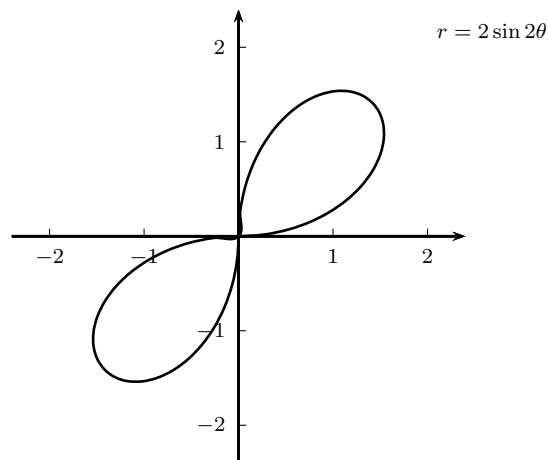
(c) $\frac{-\sqrt{10}}{3} + \ln(3 + \sqrt{10}) + \sqrt{2} - \ln(1 + \sqrt{2})$

2. $3\pi/8$

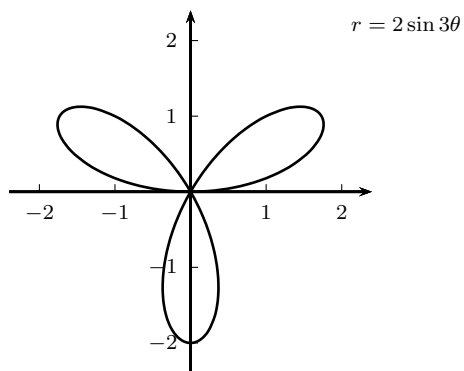
3. (a) $r = 2 \sin(\theta)$



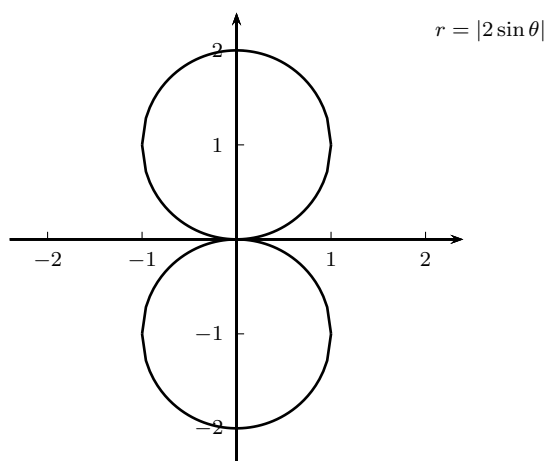
(b) $r = 2 \sin(2\theta)$



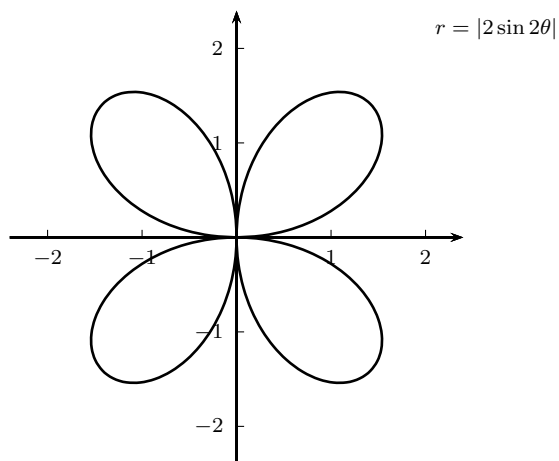
(c) $r = 2 \sin(3\theta)$



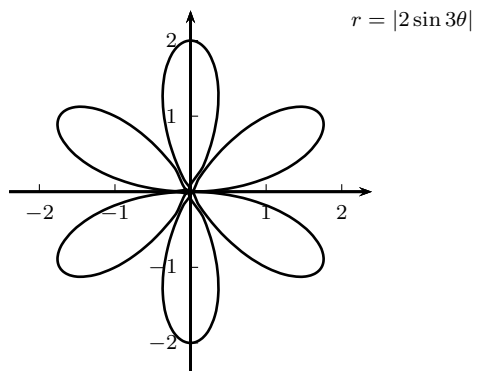
(d) $r = |2 \sin(\theta)|$



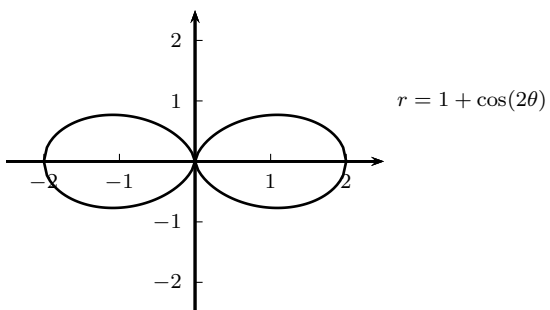
(e) $r = |2 \sin(2\theta)|$



(f) $r = |2 \sin(3\theta)|$



4. (a)



(b) $1/3$

5. The curves intersect at the origin, $t = 0$, the slope of the tangent at $t = 0$ is -1 for both curves.