Name:_____

Math 121 Self-Assessment Quiz #12 December 9, 2022

• Please see the course webpage for the answer key.

1. Compute the **area** bounded outside the polar curve $\boldsymbol{r = 1 + \sin\theta}$ and inside the polar curve $\boldsymbol{r = 3\sin\theta}$. **Sketch** the Polar curves **and** shade the bounded area.

2. (a) Sketch the polar curve $r = 1 + 2\cos\theta$.

(b) Set-up, **BUT DO NOT EVALUATE!!**, the definite integral representing the area inside the larger loop.

(c) Set-up, **BUT DO NOT EVALUATE!!**, the definite integral representing the area inside the smaller loop.

3. (a) Sketch the polar curves $r = 2 + 2\cos\theta$ and $r = 2 - 2\cos\theta$ on the same graph.

(b) Compute the area bounded between the polar curves $r = 2 + 2\cos\theta$ and $r = 2 - 2\cos\theta$.