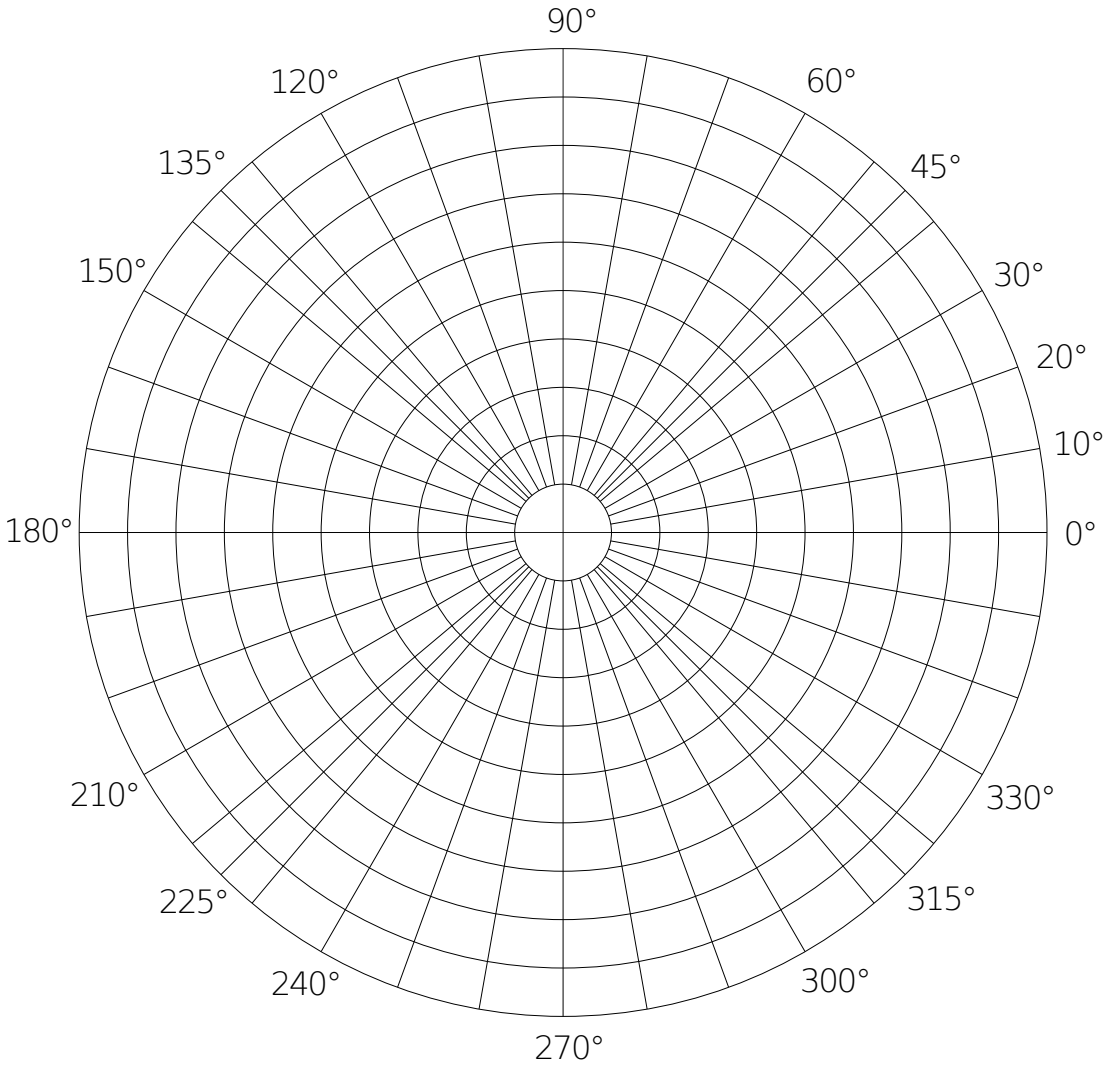
# POLAR GRAPHS

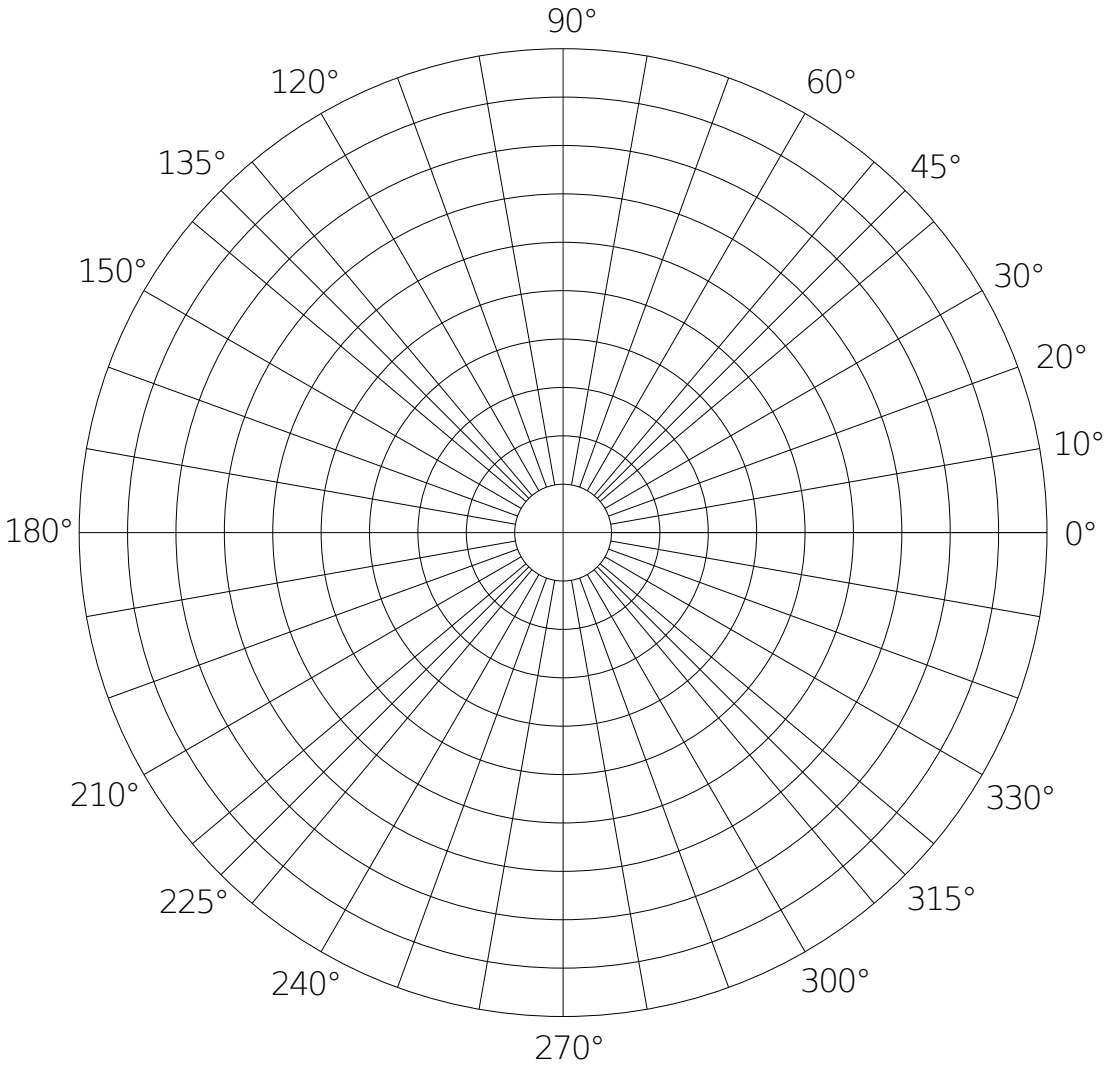
TEXT: 9.2

| LAST NAME | FIRST NAME | DATE |
|---|---|---|
| | | |

**1** (2 points). Sketch the graph of the function $r(\theta) = \sqrt{\dfrac{\theta}{\pi}}$ for $\theta \in [0, 4\pi]$. To get a nice scale, make the outermost circle to be radius 2.



**2** (2 points)**.** Sketch the graph of the function $r(\theta) = 4\sin(5\theta)$



**3.** Find a functional expression $r = f(\theta)$ in polar coordinates for the line $x + y = 2$.

**4.** Find an equation in rectangular coordinates for the lemniscate $r^2 = \cos(2\theta)$.

**5** (2 points)**.** Solve the system and find all points $(r, \theta)$ where the curves intersect. Make a corresponding sketch.

$$\begin{cases} r = \sin\theta \\ r = \cos\theta \end{cases}$$