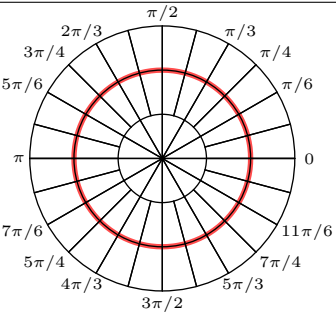
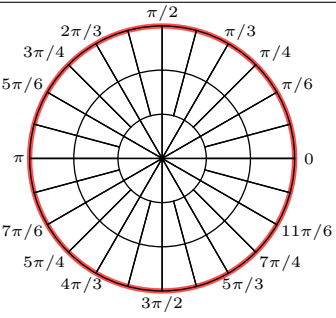
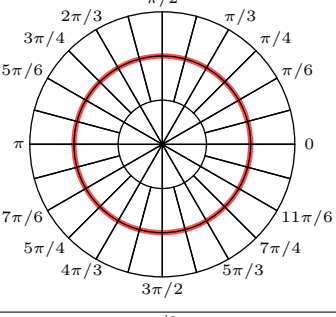
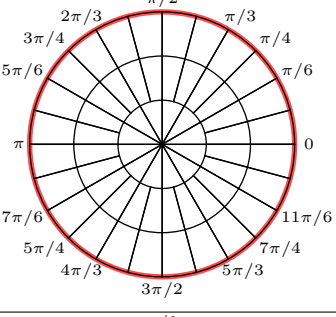
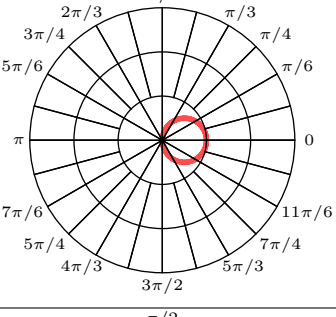
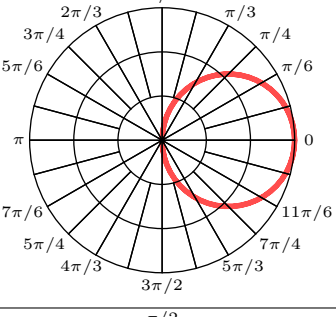
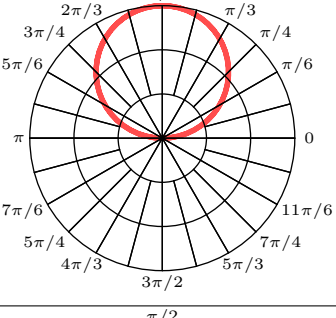
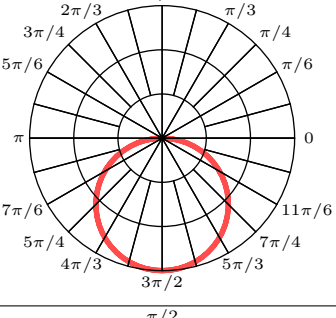
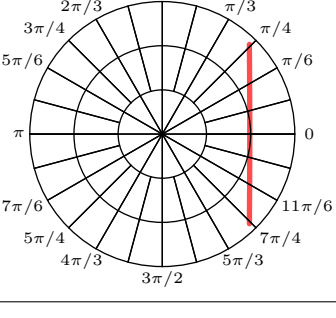
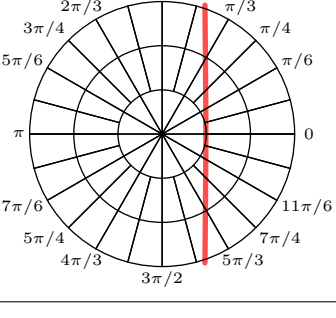


**Desmos Polar Graph Challenge** Plot the graphs below in Desmos. The left-hand graph's equation is given. Determine the right-hand graph's equation using logic and a bit of trial-and-error.

<p>1) <math>r = 2</math></p> 	 <p><math>r =</math></p>
<p>2) <math>r = -2</math></p> 	 <p>(different) <math>r =</math></p>
<p>3) <math>r = \cos(\theta)</math></p> 	 <p><math>r =</math></p>
<p>4) <math>r = 3 \sin(\theta)</math></p> 	 <p><math>r =</math></p>
<p>5) <math>r = 2 \sec(\theta)</math></p> 	 <p><math>r =</math></p>

In problems 6 and 7, one example is given followed by three challenges. Finally, 8 and 9 are challenges with no examples.

6) $r = 2 \sin 2\theta$		$r =$	
$r =$		$r =$	
7) $r = 1 + 3 \cos \theta$		$r =$	
$r =$		$r =$	
8) $r =$		9) $r =$	

**Closing task:** Make your own equation with an interesting graph. Copy it onto the whiteboard and be prepared to explain it to the class. Don't just pick a random silly equation you can't explain! Write your equation below.