

## HPISD Curriculum: Pre Calculus Pre-AP

HPISD Curriculum: Pre Calculus Pre-AP							
Title	Estimated Duration	6 Weeks					
Unit 11: Polar Equations	9 days	1	2	3	4	<b>5</b>	6
<b>Unit Overview</b>							
Polar Equations							
<b>Generalizations/Enduring Understandings</b>							
The student will understand that:	<ul style="list-style-type: none"> <li>• The relationship between the Cartesian coordinate system and the polar coordinate system.</li> <li>• Systems of polar equations can be solved by graphing and algebraic means.</li> <li>• Polar inequalities can be graphed.</li> </ul>						
<b>Concepts</b>	<b>Guiding/Essential Questions</b>						
<ul style="list-style-type: none"> <li>• polar equations</li> <li>• polar inequalities</li> </ul>	<ul style="list-style-type: none"> <li>• How can points and equations be converted from rectangular form to polar form and vice versa?</li> <li>• How can the intersection(s) of polar equations be determined?</li> <li>• How can the area to be shaded in a polar inequality be determined?</li> </ul>						
<b>Learning Targets</b>							
Students will graph various types of polar equations and solve systems of polar equations.							
<b>Formative Assessments</b>				<b>Summative Assessments</b>			

<b>TEKS:</b>	<b>Processes and Skills:</b> What students should be able to DO	<b>Facts:</b> What students should KNOW
<p>Graph points in the polar coordinate system and convert between rectangular coordinates and polar coordinates <b>P.3.D</b></p> <p>Graph polar equations such as cardioids, limacons, or lemniscates by plotting points and using technology. <b>P.3.E</b></p>	<ul style="list-style-type: none"> <li>• Graph polar equations by plotting points.</li> <li>• Convert between polar and rectangular coordinates.</li> <li>• Graph polar equations by using technology.</li> <li>• Find the intersection of two polar equations.</li> <li>• Determine where to shade given a polar inequality.</li> </ul>	<ul style="list-style-type: none"> <li>• Polar equations may have different periods than trigonometric functions in rectangular form.</li> <li>• Determining the intersection between two polar equations can be done algebraically or graphically.</li> </ul>
<b>Topics</b>		
Polar Equations		
<b>Language of Instruction</b>		
polar coordinate system polar inequality pole		
<b>State Assessment Connections</b>		<b>National Assessment Connections</b>
<b>Resources</b>		