Pre-Calculus Worksheet  Name: ______________________  
Section 10.8 – Graphs of Polar Equations   Period: ____  
with Parametrics Day One  

I. Match the equation with the correct description. DO WITHOUT GRAPHING!  

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<tbody>
<tr>
<td>1.</td>
<td>$r = 2 - 2 \sin \theta$</td>
<td>6.</td>
<td>$r = 6 \sin 2\theta$</td>
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<td>2.</td>
<td>$r = 3 \cos 4\theta$</td>
<td>7.</td>
<td>$r = 4 - 2 \sin \theta$</td>
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<td>3.</td>
<td>$r = 9 \cos \theta$</td>
<td>8.</td>
<td>$r = 3 + 3 \sin \theta$</td>
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<td>4.</td>
<td>$r = 4 - 2 \cos \theta$</td>
<td>9.</td>
<td>$r = 5 - 5 \cos \theta$</td>
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<td>5.</td>
<td>$r = 3 + 5 \sin \theta$</td>
<td>10.</td>
<td>$r = 2 + 3 \sin \theta$</td>
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II. Graph each of the following polar equations.  

11. $r = -4 \sin \theta$  
12. $r = 2 - 4 \cos \theta$  
13. $r = 4 \cos 3\theta$  
14. $r = 4 \sin 2\theta$
III. Fill in the requested information AND sketch the curve for EACH pair of parametric equations.

16. \( x(t) = 2 - 3t \) and \( y(t) = 5 - t \) for \( t \) in \([-1, 3]\)

Endpoints of the Curve: ____________ and ____________

Domain: _______________    Range: _______________

Parameter ELIMINATED from the equations yields:

Does the curve represent a function? ________________
Why or why not?

17. \( x(t) = 2t^2 - 1 \) and \( y(t) = t \) for \( t \) in \([-2, 2]\).

Endpoints of the Curve: ____________ and ____________

Domain: _______________    Range: _______________

Parameter ELIMINATED from the equations yields:

Does the curve represent a function? ________________
Why or why not?

18. \( x(t) = 2t \) and \( y(t) = t^2 \) for \( t \) in \([-3, 1]\)

Endpoints of the Curve: ____________ and ____________

Domain: _______________    Range: _______________

Parameter ELIMINATED from the equations yields:

Does the curve represent a function? ________________
Why or why not?