Warm up (Review)

1. Eliminate the parameter for the equation Write in rectangular form \[ x = t - 1 \quad y = 2t^2 - t \]

2. Write the parametric equations for an ellipse with a center of (4, 2) a major vertex at (4,7) and a minor vertex at (6, 2).
   \[ \frac{(x-4)^2}{4} + \frac{(y-2)^2}{25} = 1 \]
   \[ x = 2\cos\theta + 4 \]
   \[ y = 5\sin\theta + 2 \]

Convert the polar equations to rectangular equations

3. \[ r = 7\sin\theta - 2\cos\theta \]
4. \[ \theta = \pi/3 \] Bonus: \[ r = \frac{4}{2 + \cos \theta} \]

Convert the rectangular point to polar: (Give (-r, +\theta) answer)

6. \((2, -3)\)
7. \((-4, -6)\)
1) \( y = -2x^2 - 3x \) given \( t = x + 3 \)

\[ y = -2t^2 + 9t - 9 \]

2) Circle with a center of (2, -3) and a radius of 9

\[ x = 9\cos \theta + 2 \]
\[ y = 9\sin \theta - 3 \]

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Topics for Test

**Parametrics**
- evaluate using a table
- graph a parametric
- eliminate the parameter
- create a parametric given a rectangular equation

**PROJECTILE MOTION**

**Polars**
- graph a polar coordinate
- convert a polar coordinate to rectangular
- convert a rectangular coordinate to polar and name in 3 other ways
- convert rectangular equations to polar equations
- convert polar equations to rectangular equations
- graph polar equations
Convert into Parametric equations:

1) \( y = -4x^2 - x \) given \( t = x - 1 \)

2) Ellipse with a center of \((-2, 1)\) a major vertex at \((-2, 7)\) and a minor vertex at \((2, 1)\).

Convert the polar equations to rectangular equations

1. \( r = 2\cos\theta - 6\sin\theta \)

2. \( \theta = 2\pi/3 \)

3. \( r = 9 \)

4. \( r = -5\csc\theta \)