

The Secret of Sketching a Polar Graph Pre Calculus 8.2 Part 1

Lesson 239 | Precalculus | Polar cardioids and roses

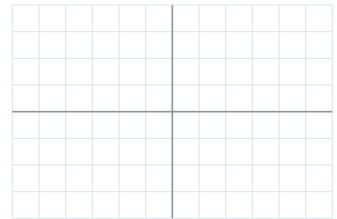
<https://www.youtube.com/watch?v=U6CJ6Avxpa0>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Sketch $r=7(1+\cos \theta)$. Identify the curve, symmetry, maximum radius, and points at $\theta=0, \pi/2, \pi, 3\pi/2$.

**02**

Analyze the polar rose $r=10\cos(2\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

03

Analyze the polar rose $r=3\cos(5\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

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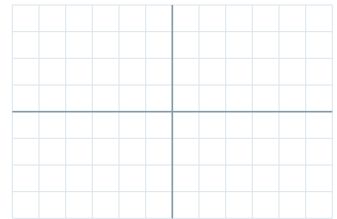
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Name: _____ Date: _____ Show your reasoning.

04

Sketch $r=13(1+\cos \theta)$. Identify the curve, symmetry, maximum radius, and points at $\theta=0$, $\pi/2$, π , $3\pi/2$.

**05**

Analyze the polar rose $r=10\cos(4\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

06

Analyze the polar rose $r=12\cos(4\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

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- 01** Sketch $r=7(1+\cos \theta)$. Identify the curve, symmetry, maximum radius, and points at $\theta=0, \pi/2, \pi, 3\pi/2$.

Cardioid symmetric about the polar axis. Maximum $r=14$ at $\theta=0$. Radius values 14,7,0,7; rectangular points (14,0),(0,7),(0,0),(0,-7).

- 02** Analyze the polar rose $r=10\cos(2\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

Petal count is n for odd n and $2n$ for even n : 4. Petal length 10. At $\theta=0, r=10$; hence a petal lies on the positive polar axis.

- 03** Analyze the polar rose $r=3\cos(5\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

Petal count is n for odd n and $2n$ for even n : 5. Petal length 3. At $\theta=0, r=3$; hence a petal lies on the positive polar axis.

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- 04** Sketch $r=13(1+\cos \theta)$. Identify the curve, symmetry, maximum radius, and points at $\theta=0$, $\pi/2$, π , $3\pi/2$.

Cardioid symmetric about the polar axis. Maximum $r=26$ at $\theta=0$. Radius values 26,13,0,13; rectangular points (26,0),(0,13),(0,0),(0,-13).

- 05** Analyze the polar rose $r=10\cos(4\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

Petal count is n for odd n and $2n$ for even n : 8. Petal length 10. At $\theta=0$, $r=10$; hence a petal lies on the positive polar axis.

- 06** Analyze the polar rose $r=12\cos(4\theta)$. Give petal count, petal length, and one direction of maximum positive radius.

Petal count is n for odd n and $2n$ for even n : 8. Petal length 12. At $\theta=0$, $r=12$; hence a petal lies on the positive polar axis.