CENGAGE | WEBASSIGN

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10.3 Coordenadas Polares (Homework)

INSTRUCTOR
Christiaan Ketelaar
Universidad Francisco Marroquin

Current Score

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
POINTS	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	–/2	**2/2**	–/0	–/2	–/3	–/0

TOTAL SCORE

2/35	5.7%

Due Date

DECEMBER 21
11:59 PM CST

Request Extension

Description

Assignment Submission & Scoring

Assignment Submission

For this assignment, you submit answers by question parts. The number of submissions remaining for each question part only changes if you submit or change the answer.

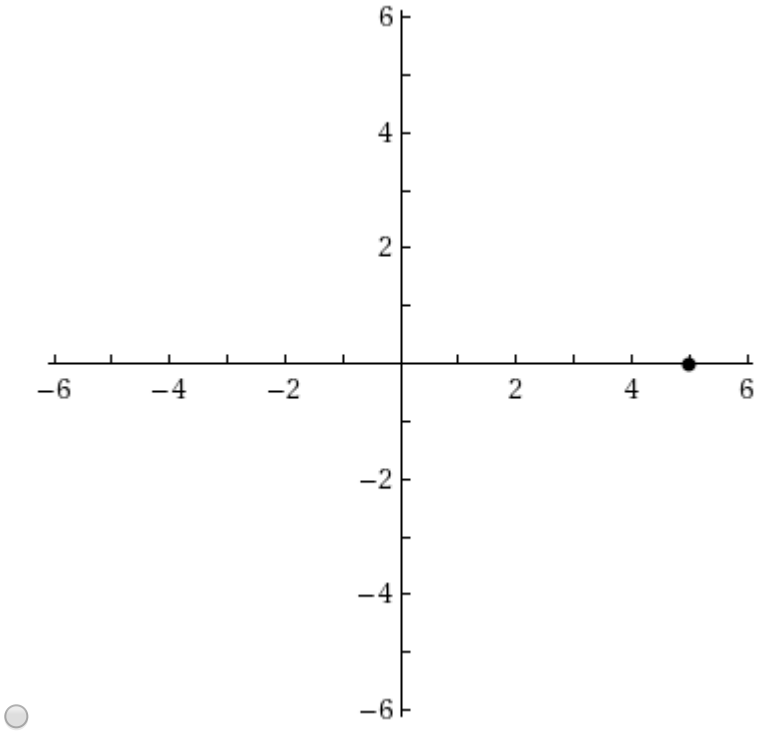
Assignment Scoring

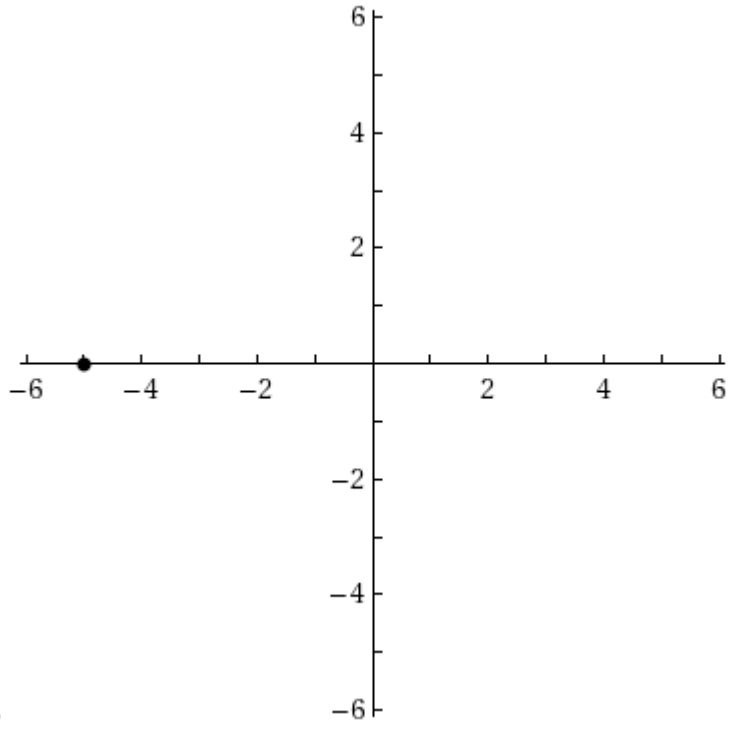
Your last submission is used for your score.

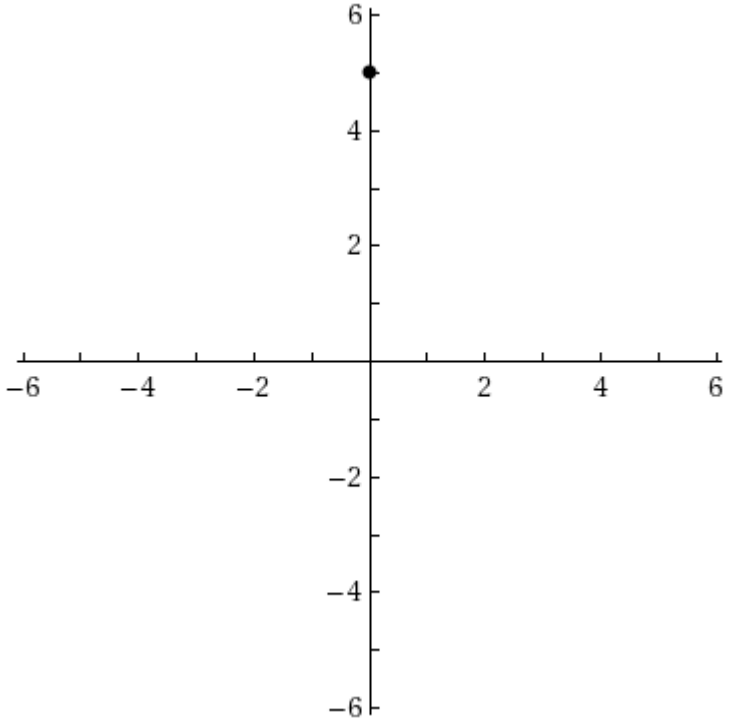
1. –/2 points SCalcET8 10.3.003. My Notes Ask Your Teacher

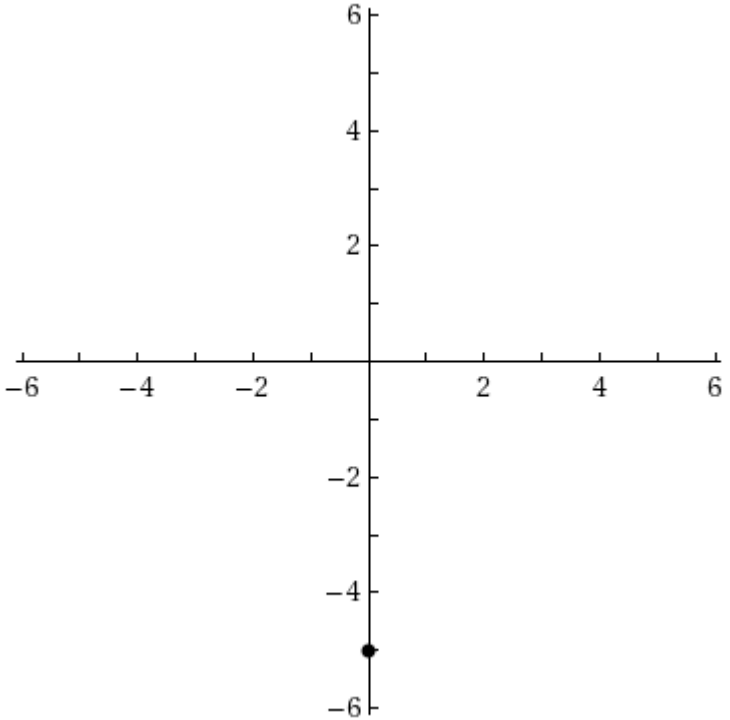
Plot the point whose polar coordinates are given. Then find the Cartesian coordinates of the point.

(a) $(5, 3\pi/2)$









$(x, y) = \left($

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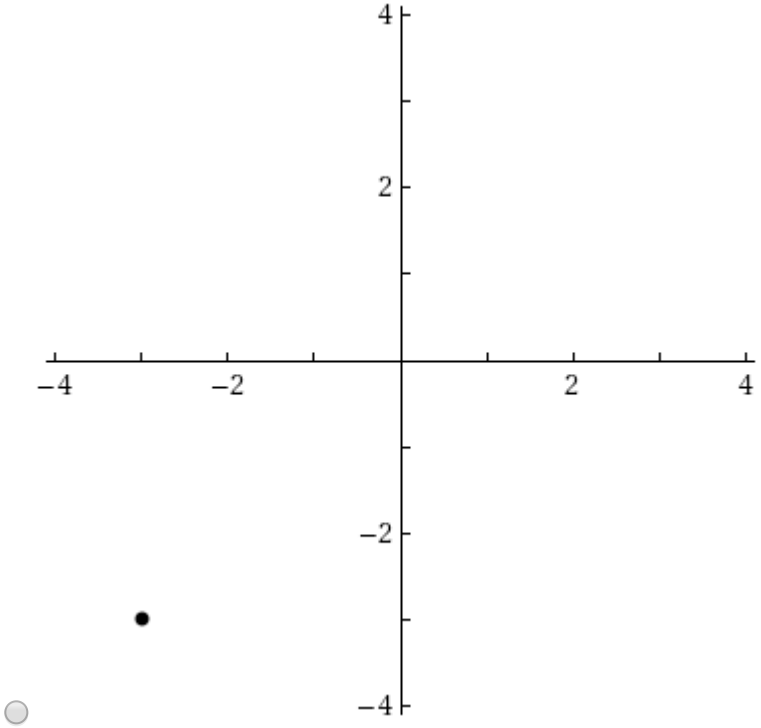
(b) $(3\sqrt{2}, \pi/4)$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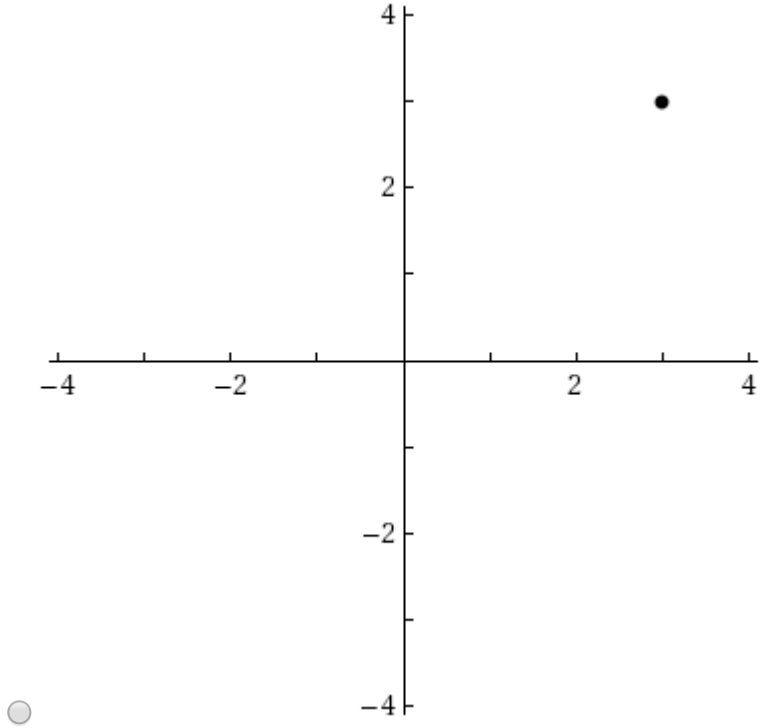
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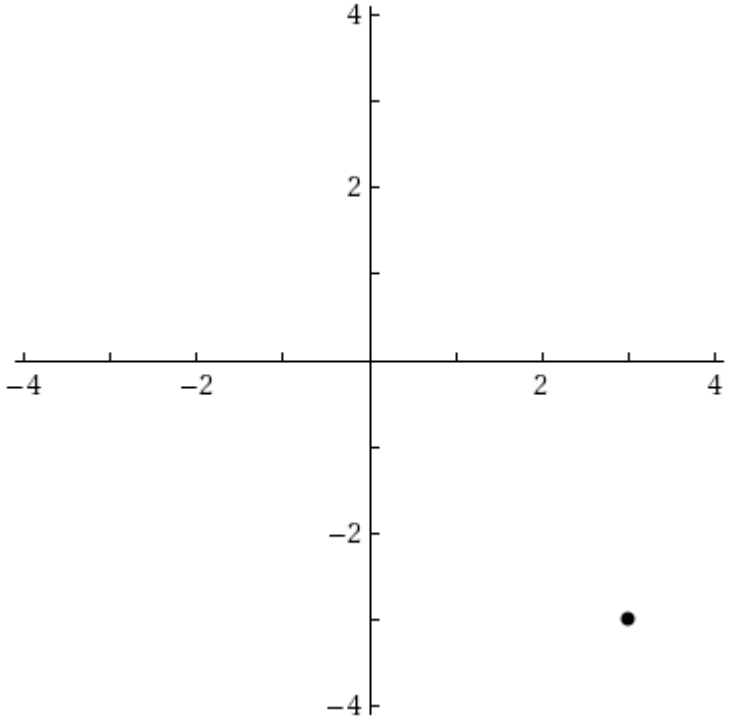

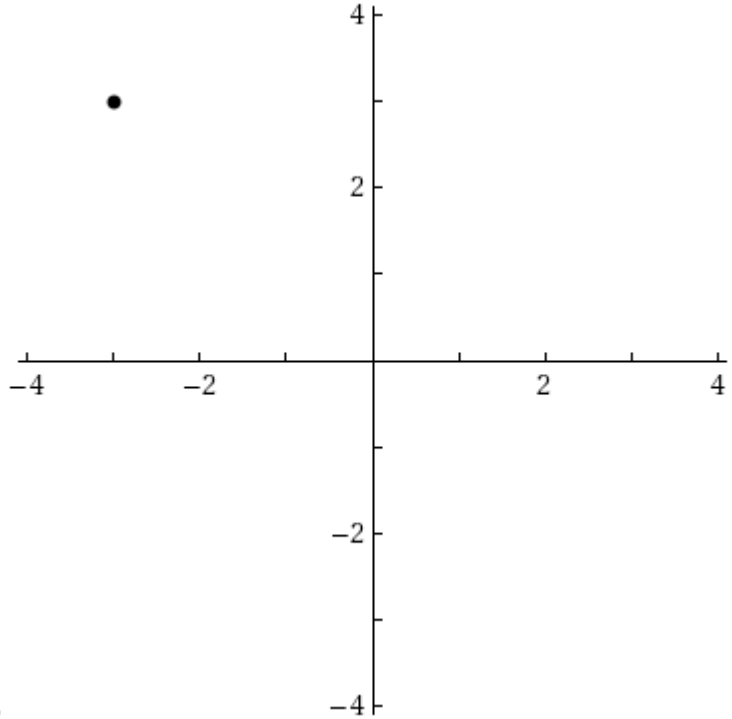

$(x, y) = \left($

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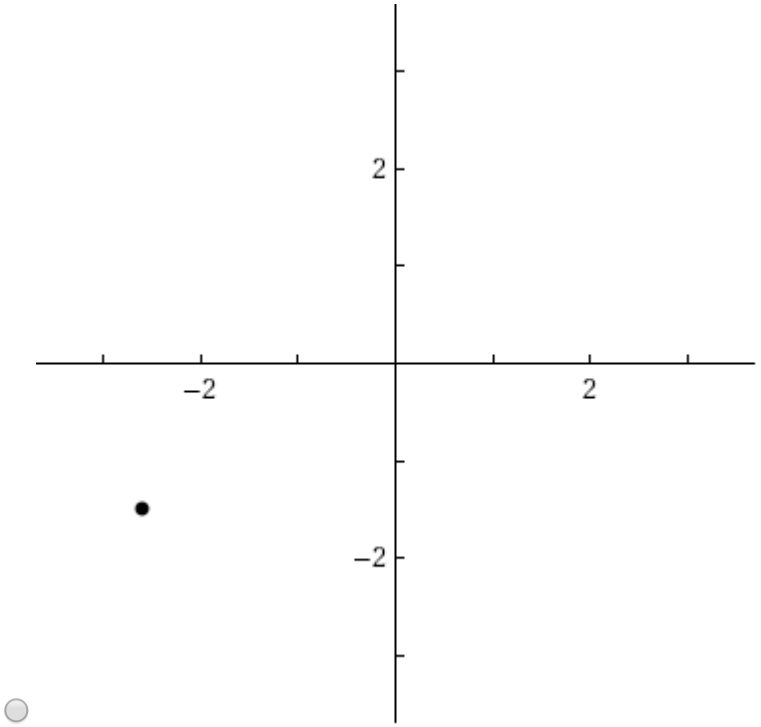
(c) $(-3, -\pi/6)$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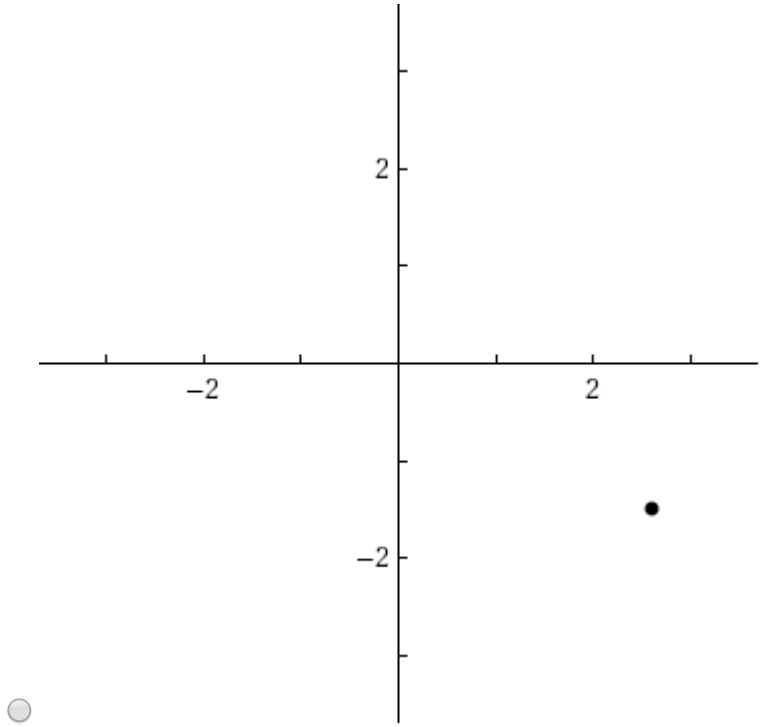
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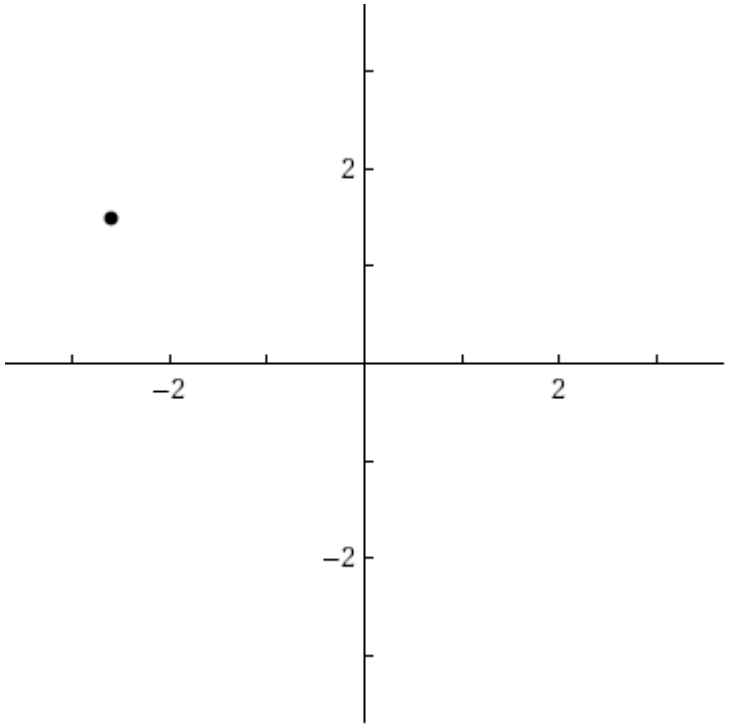
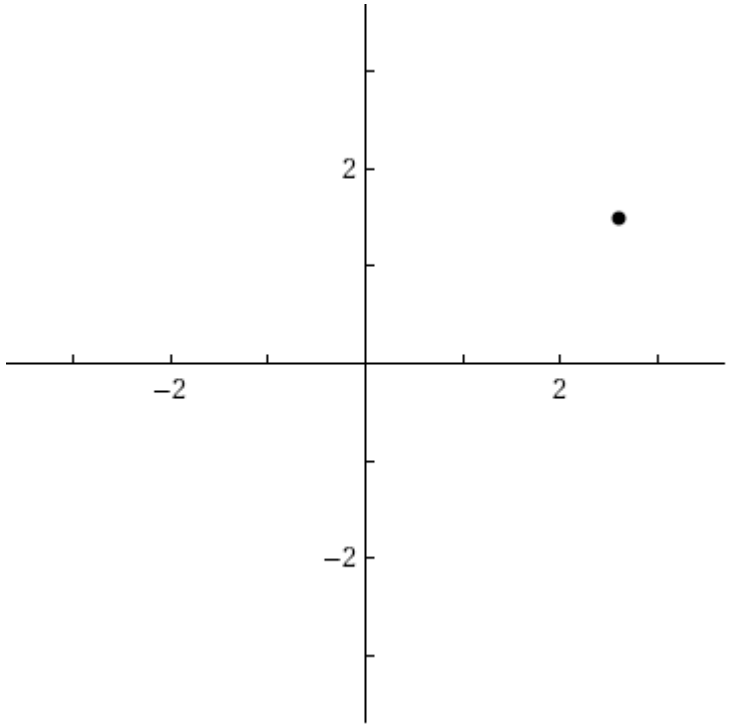




$(x, y) = \left($

$\right)$

2. –/2 points SCalcET8 10.3.005. My Notes Ask Your Teacher

The Cartesian coordinates of a point are given.

(a) $(-8, 8)$

(i) Find polar coordinates (r, θ) of the point, where $r > 0$ and $0 \le \theta < 2\pi$.

$(r, \theta) =$ (

)

(ii) Find polar coordinates (r, θ) of the point, where $r < 0$ and $0 \le \theta < 2\pi$.

$(r, \theta) =$ (

)

(b) $(2, 2\sqrt{3})$

(i) Find polar coordinates (r, θ) of the point, where $r > 0$ and $0 \le \theta < 2\pi$.

$(r, \theta) =$ (

)

(ii) Find polar coordinates (r, θ) of the point, where $r < 0$ and $0 \leq \theta < 2\pi$.

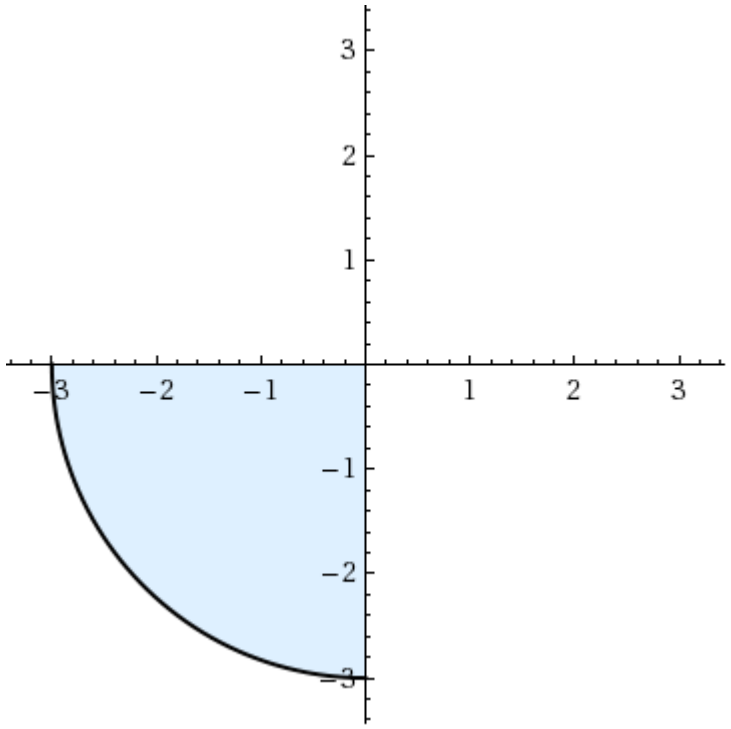
$(r, \theta) =$ (

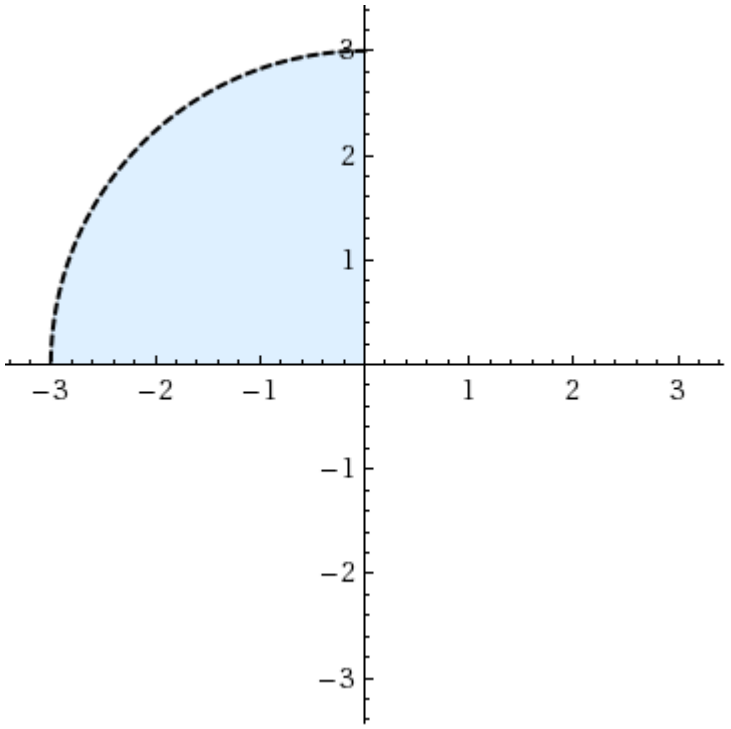
)

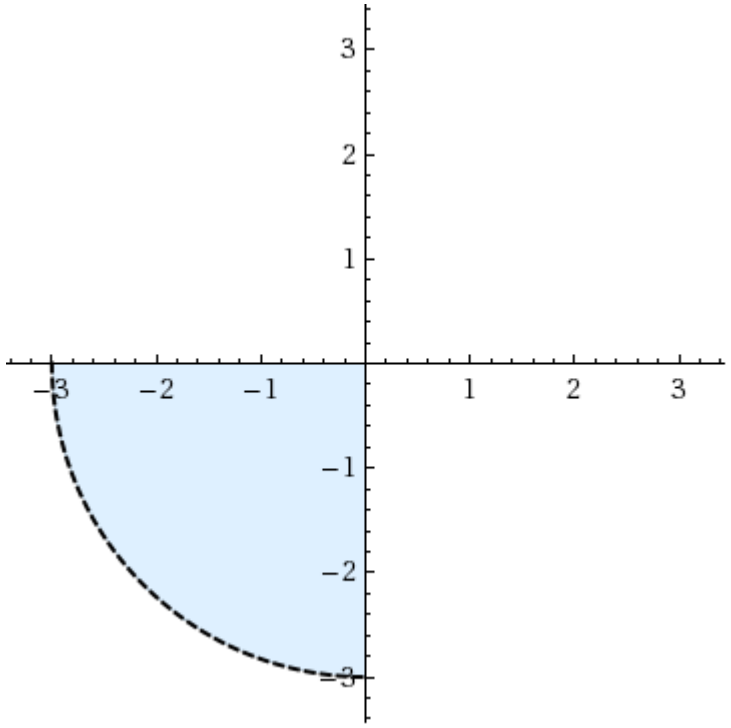
3. –/2 points SCalcET8 10.3.008. My Notes Ask Your Teacher

Sketch the region in the plane consisting of points whose polar coordinates satisfy the given conditions.

$0 \le r < 3, \quad \pi \le \theta \le 3\pi/2$



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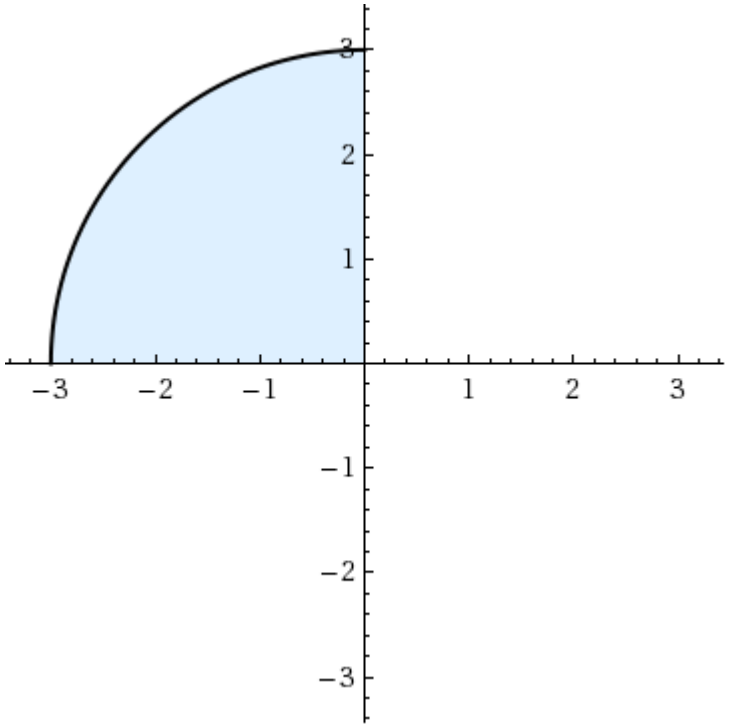
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4. –/2 points SCalcET8 10.3.506.XP. My Notes Ask Your Teacher

The Cartesian coordinates of a point are given.

(a) $(2\sqrt{3}, 2)$

(i) Find polar coordinates (r, θ) of the point, where $r > 0$ and $0 \le \theta < 2\pi$.

$(r, \theta) =$ ( )

(ii) Find polar coordinates (r, θ) of the point, where $r < 0$ and $0 \le \theta < 2\pi$.

$(r, \theta) =$ ( )

(b) $(1, -5)$

(i) Find polar coordinates (r, θ) of the point, where $r > 0$ and $0 \le \theta < 2\pi$.

$(r, \theta) =$ ( )

(ii) Find polar coordinates (r, θ) of the point, where $r < 0$ and $0 \leq \theta < 2\pi$.

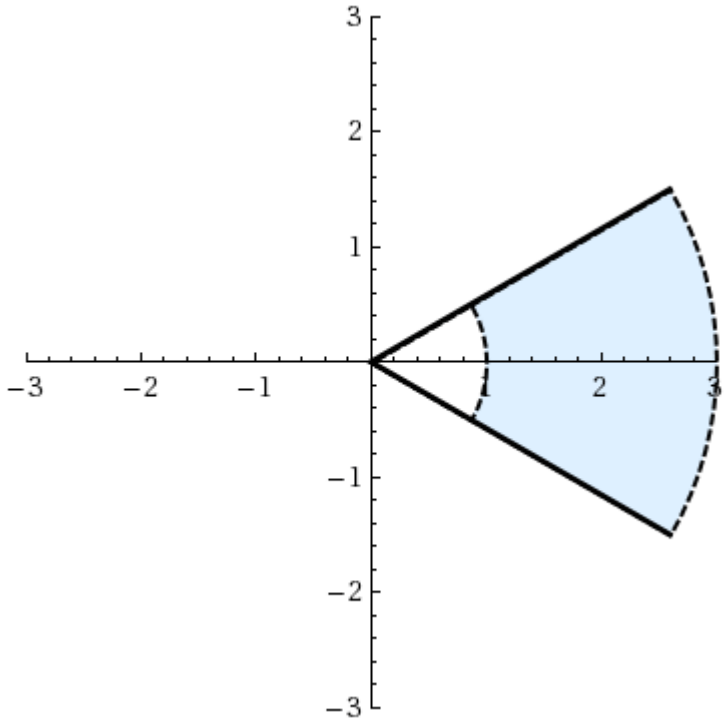
$(r, \theta) =$ (

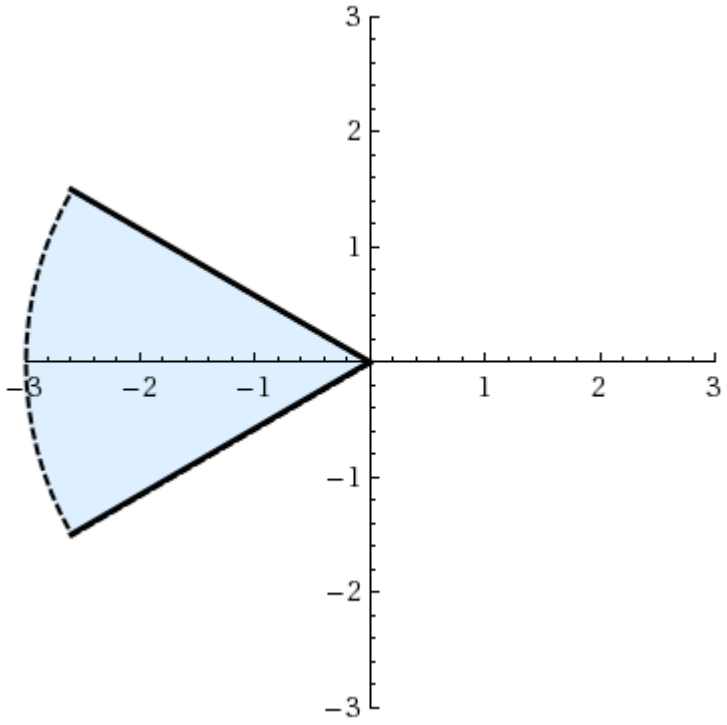
)

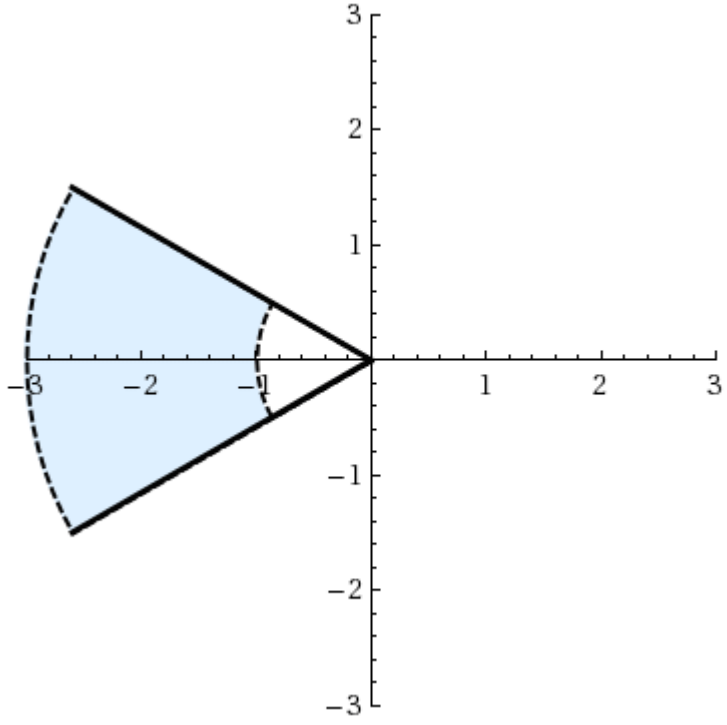
5. –/2 points SCalcET8 10.3.011. My Notes Ask Your Teacher

Sketch the region in the plane consisting of points whose polar coordinates satisfy the given conditions.

$1 < r < 3, \quad 11\pi/6 \le \theta \le 13\pi/6$



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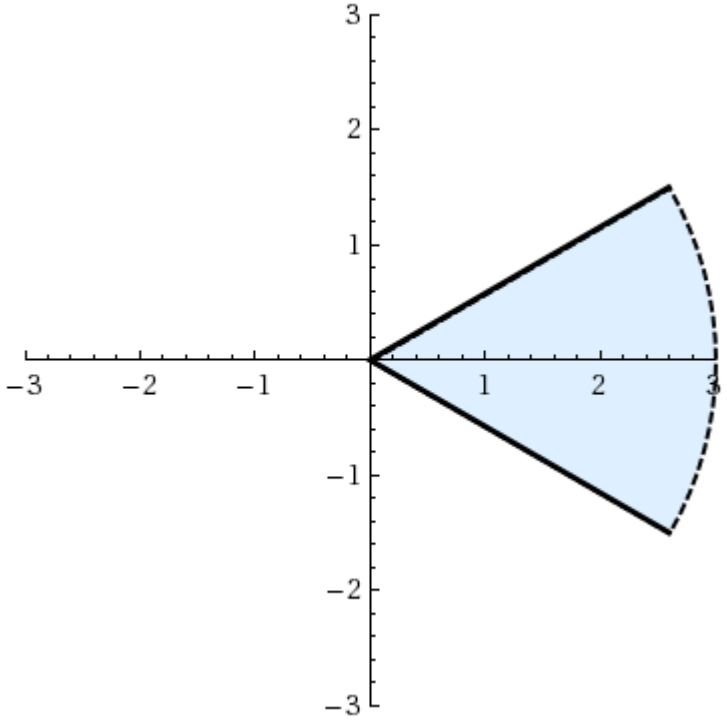
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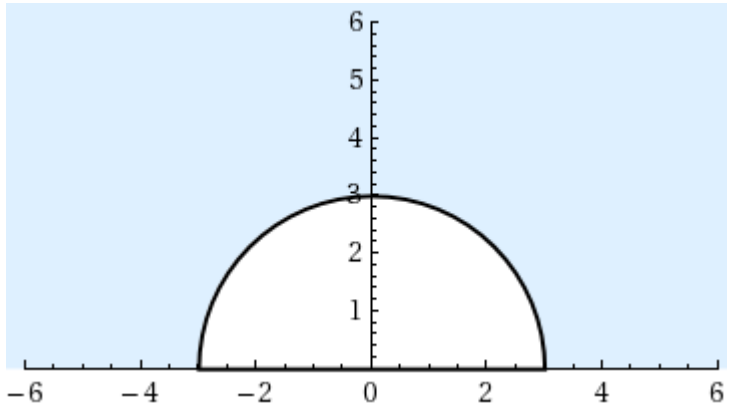
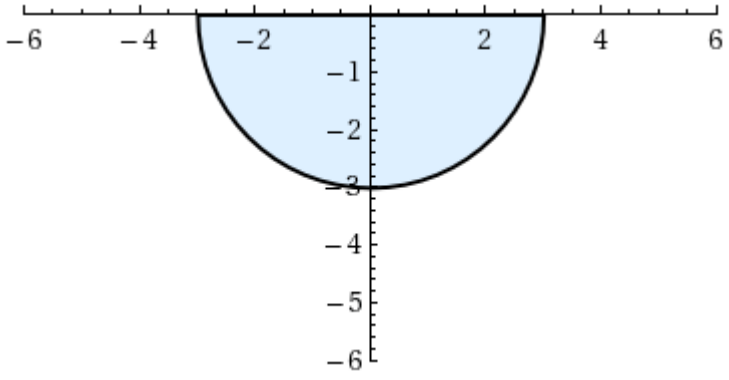
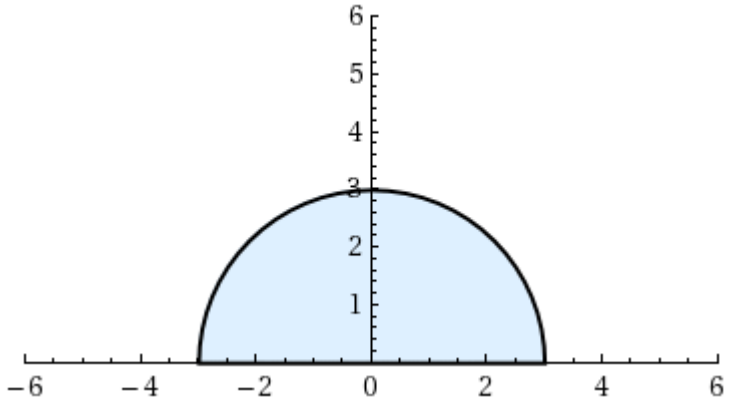
6. –/2 points SCalcET8 10.3.012. My Notes Ask Your Teacher

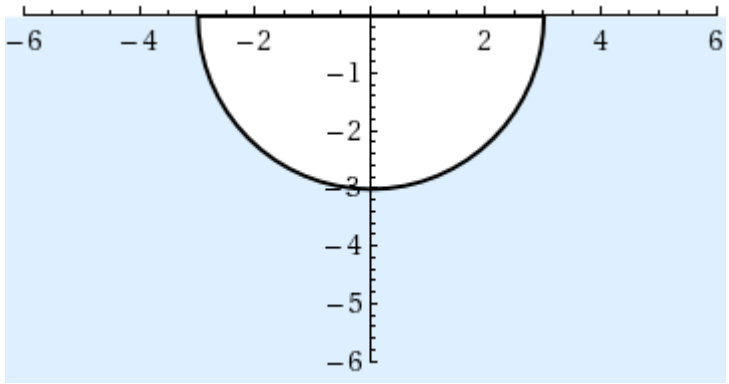
Sketch the region in the plane consisting of points whose polar coordinates satisfy the given conditions.

$r \geq 3, \quad \pi \leq \theta \leq 2\pi$









7. –/2 points SCalcET8 10.3.015. My Notes Ask Your Teacher

Find a Cartesian equation for the curve and identify it.

$r^2 = 7$

- parabola
- circle
- hyperbola
- limaÃ§on
- ellipse

8. –/2 points SCalcET8 10.3.017. My Notes Ask Your Teacher

Find a Cartesian equation for the curve and identify it.

$r = 9\cos(\theta)$

- hyperbola
- ellipse
- parabola
- limaçon
- circle

9. –/2 points SCalcET8 10.3.019. My Notes Ask Your Teacher

Find a Cartesian equation for the curve and identify it.

$r^2 \cos(2\theta) = 1$

- hyperbola
- parabola
- ellipse
- limaçon
- circle

10. –/2 points SCalcET8 10.3.021. My Notes Ask Your Teacher

Find a polar equation for the curve represented by the given Cartesian equation.

$y = 7$

11. –/2 points SCalcET8 10.3.028. My Notes Ask Your Teacher

For each of the described curves, decide if the curve would be more easily given by a polar equation or a Cartesian equation. Then write an equation for the curve.

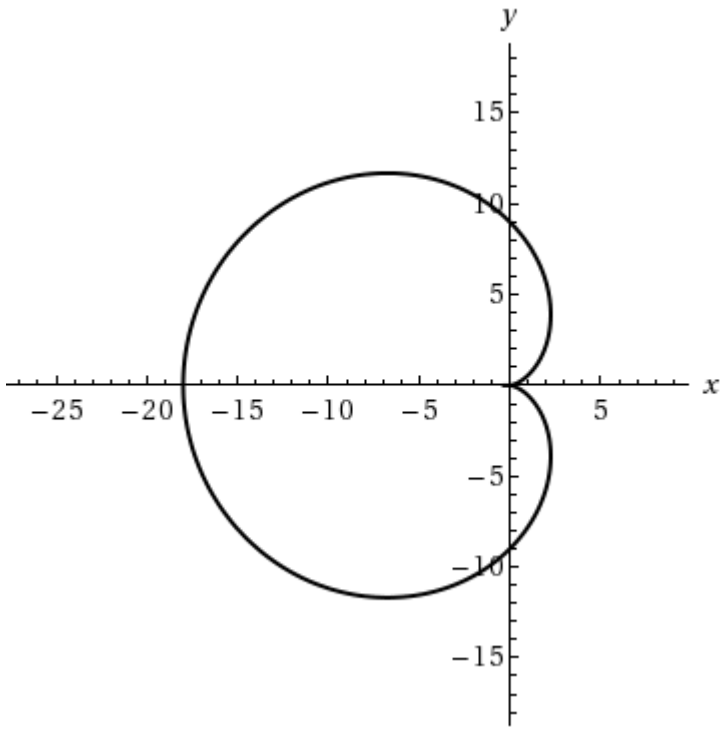
(a) A circle with radius 4 and center (2, 1).

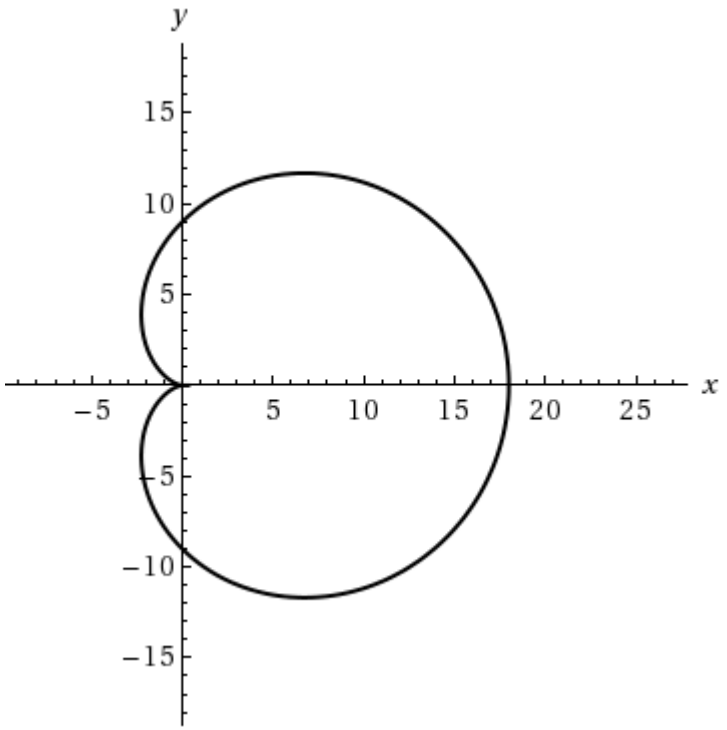
(b) A circle centered at the origin with radius 2.

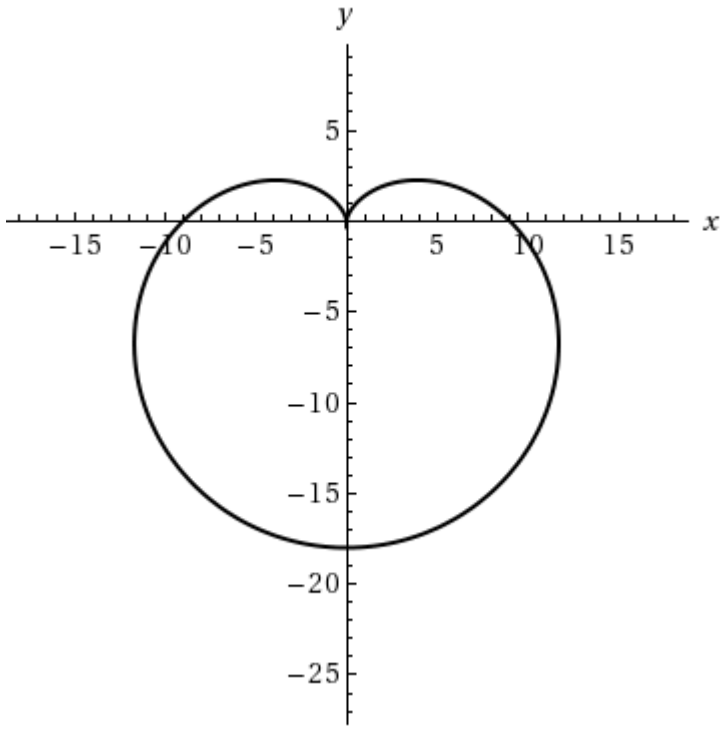
12. –/2 points SCalcET8 10.3.031. My Notes Ask Your Teacher

Sketch the curve with the given polar equation by first sketching the graph of r as a function of θ in Cartesian coordinates.

$r = 9(1 + \cos(\theta))$



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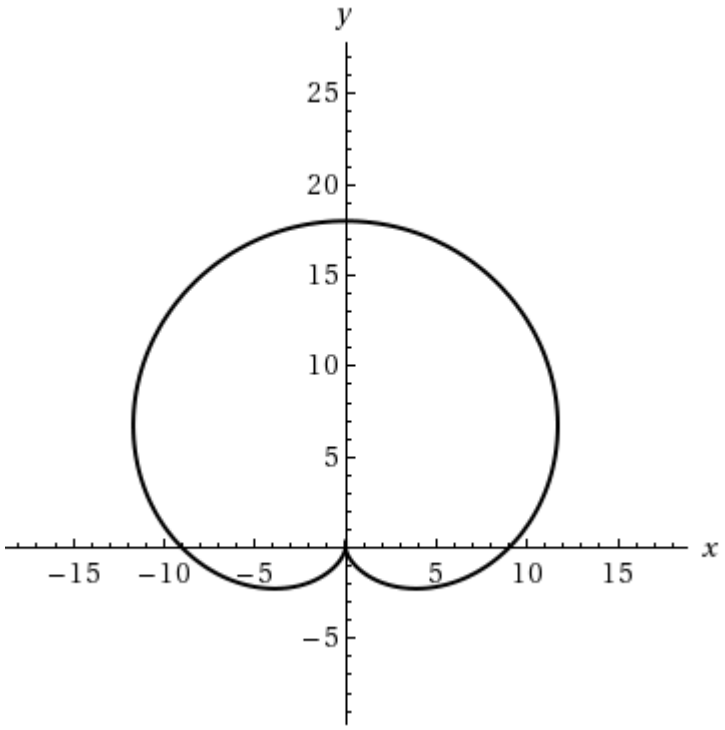
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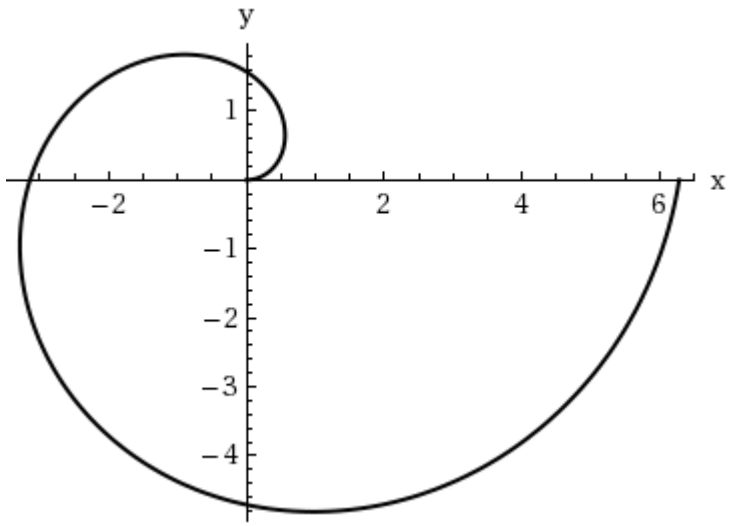
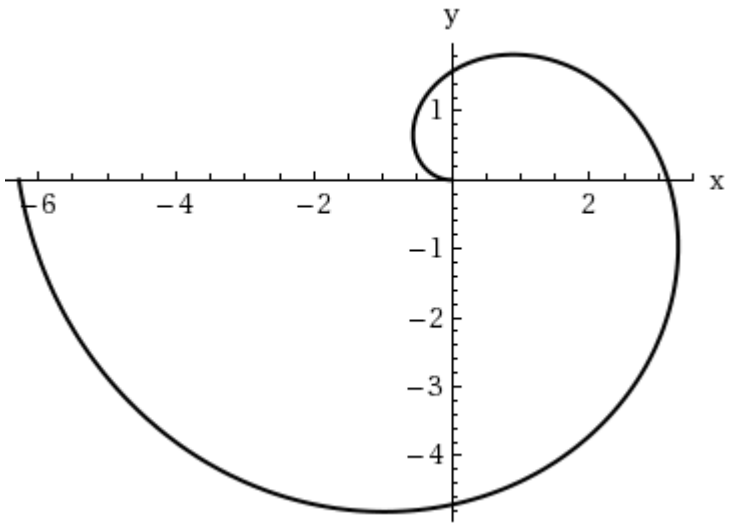
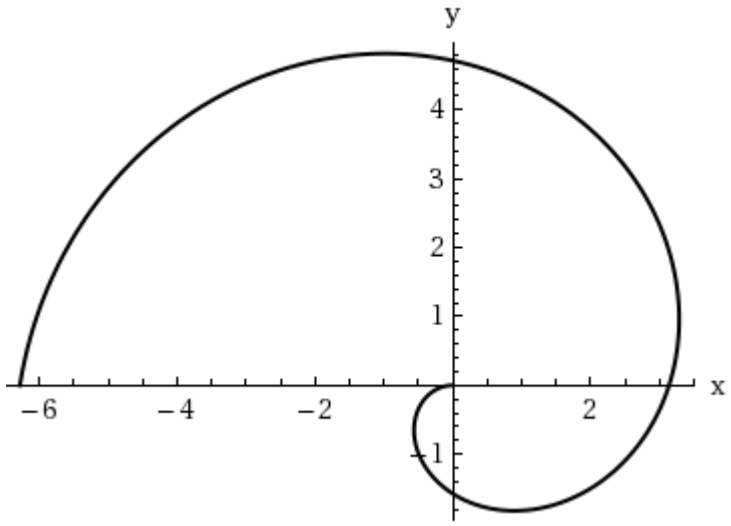
13. –/2 points SCalcET8 10.3.033. My Notes Ask Your Teacher

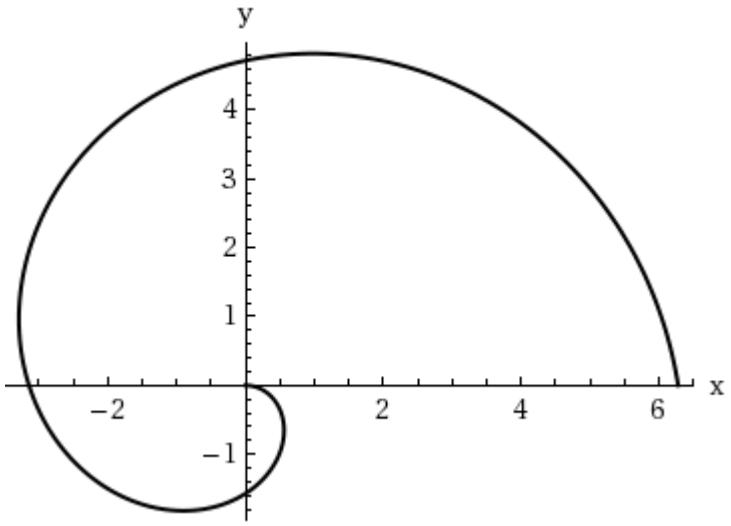
Sketch the curve with the given polar equation by first sketching the graph of r as a function of θ in Cartesian coordinates.

$r = \theta, \quad \theta \geq 0$





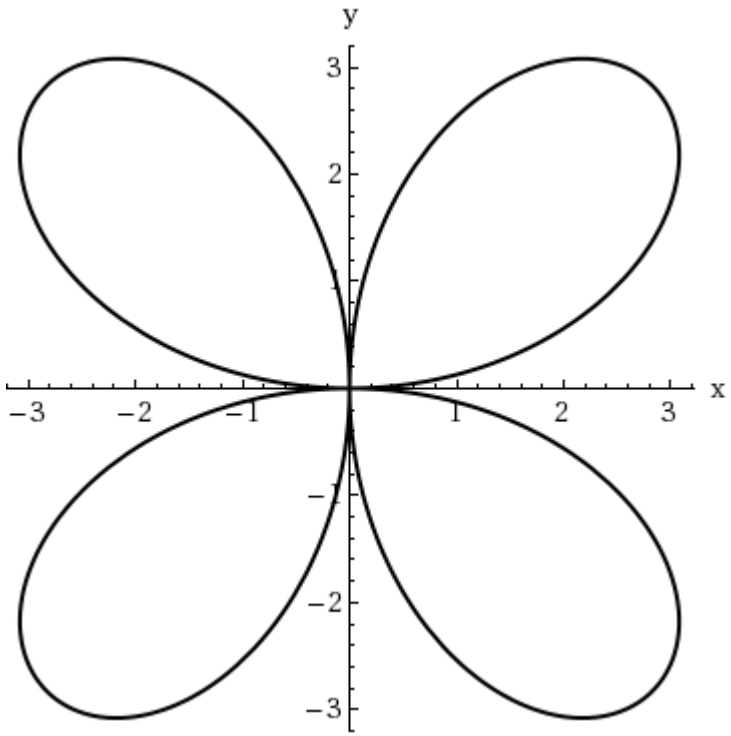


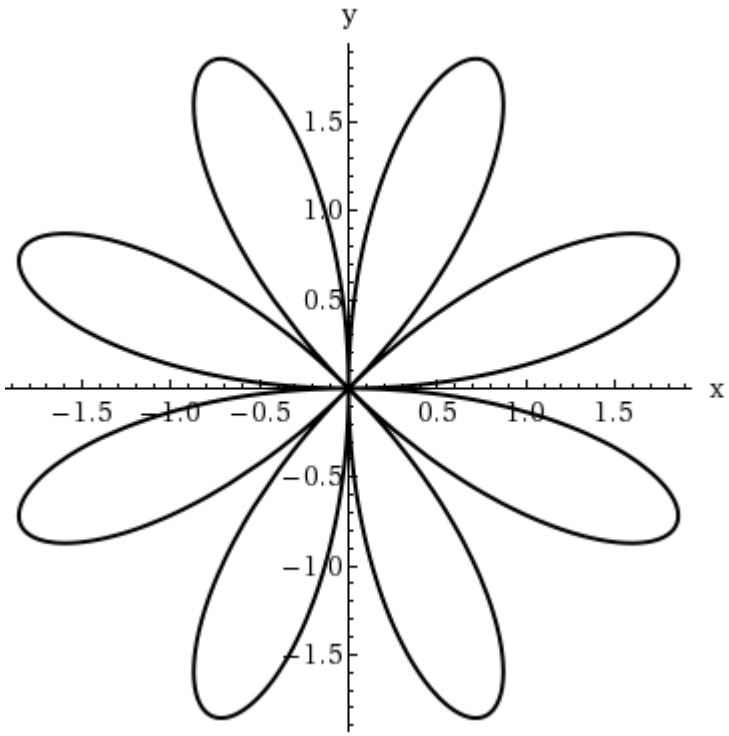


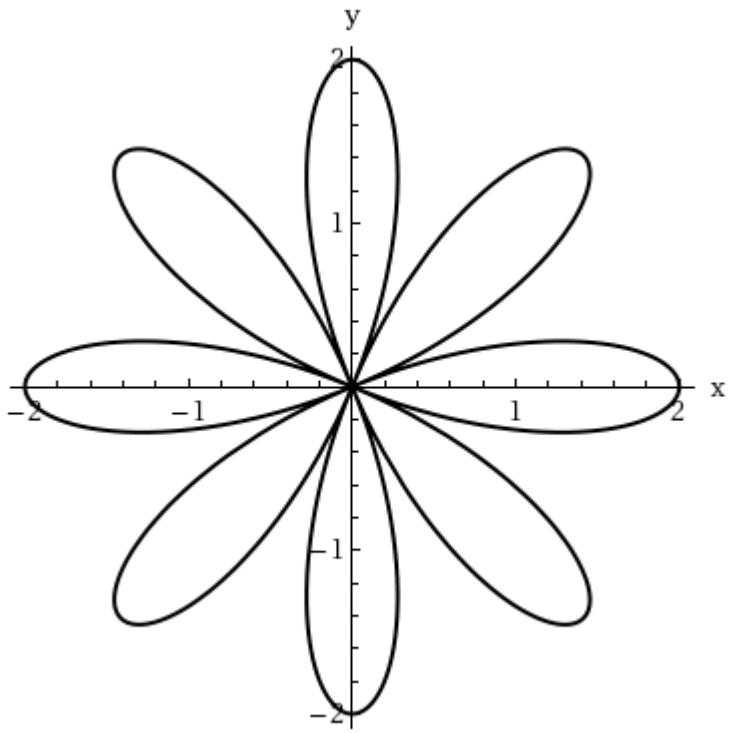
14. –/2 points SCalcET8 10.3.037. My Notes Ask Your Teacher

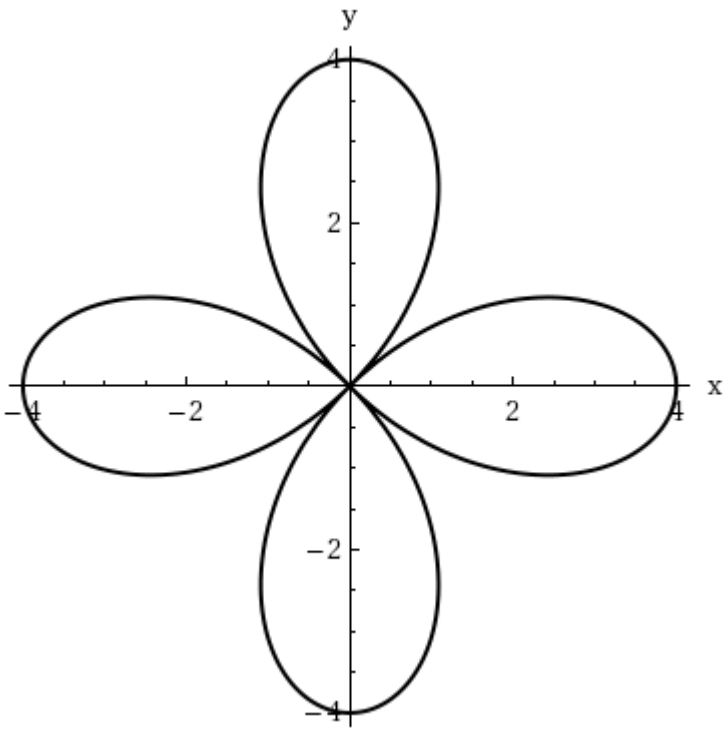
Sketch the curve with the given polar equation by first sketching the graph of r as a function of θ in Cartesian coordinates.

$r = 2\cos(4\theta)$









15. 2/2 points Previous Answers SCalcET8 10.3.057. My Notes Ask Your Teacher

Find the slope of the tangent line to the given polar curve at the point specified by the value of θ.

$r = 7/\theta, \quad \theta = \pi$

−п

16. –/0 points SCalcET8 10.3.058. My Notes Ask Your Teacher

Find the slope of the tangent line to the given polar curve at the point specified by the value of θ.

$r = \cos(\theta/3), \quad \theta = \pi$

17. –/2 points SCalcET8 10.3.059. My Notes Ask Your Teacher

Find the slope of the tangent line to the given polar curve at the point specified by the value of θ.

$r = \cos(2\theta), \quad \theta = \pi/4$

18. –/3 points SCalcET8 10.3.061. My Notes Ask Your Teacher

Find the points on the given curve where the tangent line is horizontal or vertical. (Assume $0 \le \theta < \pi$. Enter your answers as a comma-separated list of ordered pairs.)

$r = 9\cos(\theta)$

horizontal tangent $(r, \theta) =$

vertical tangent $(r, \theta) =$

19. –/0 points SCalcET8 10.3.062. My Notes Ask Your Teacher

Find the points on the given curve where the tangent line is horizontal or vertical. (Assume $0 \le \theta \le 2\pi$. Enter your answers as a comma-separated list of ordered pairs.)

$r = 1 - \sin(\theta)$

horizontal tangent $(r, \theta) =$

vertical tangent $(r, \theta) =$

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