PRINTABLE VERSION

Quiz 7

You scored 0 out of 100

Question 1

You did not answer the question.

Find the rectangular coordinates of the point.

$$\left[2,\ \frac{1}{2}\pi\right]$$

a) (-1, 3)

b) (0, 2)

c) (1, 2)

d) (0, -2)

e) (-1, 1)

Question 2

You did not answer the question.

Find the rectangular coordinates of the point.

$$\left[-4,\ \frac{3}{4}\pi\right]$$

a) ($4\sqrt{2}$, 4)

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

c) ($\sqrt{2}$, $-4\sqrt{2}$)

d) ($-2\sqrt{2}$, $2\sqrt{2}$)

e) ($\sqrt{2}$, $-\sqrt{2}$)

Question 3

You did not answer the question.

Give all possible polar coordinates for the point (4 , $4\sqrt{3}$) given in rectangular coordinates.

a) [8 , $\frac{1}{3}\pi + 2n\pi$], [-8 , $\frac{4}{3}\pi + 2n\pi$]

b) [16 , $\frac{1}{3}\pi + 2n\pi$], [-16 , $\frac{4}{3}\pi + 2n\pi$]

c) [4 , $-\frac{1}{3}\pi + 2n\pi$], [-4 , $-\frac{4}{3}\pi + 2n\pi$]

d) [-8 , $\frac{1}{3}\pi + 2n\pi$], [8 , $\frac{4}{3}\pi + 2n\pi$]

e) [8 , $\frac{4}{3}\pi + 2n\pi$], [-8 , $\frac{1}{3}\pi + 2n\pi$]

Question 4

You did not answer the question.

Find the point symmetric to [1 , $-\frac{1}{4}\pi$] about the *y*-axis.

a) [2 , $\frac{5}{4}\pi$]

b) [1 , $\frac{5}{4}\pi$]

c) [-1 , $-\frac{1}{4}\pi$]

d) [2 , $\frac{1}{4}\pi$]

e) [-1 , $\frac{3}{4}\pi$]

Question 5

You did not answer the question.

Write the equation in polar coordinates.

$$x^2 + (y - 5)^2 = 25$$

a) $r = 10\cos(\theta)$

b) $r = 5\sin(\theta) + 25$

c) $r = 25$

d) $r = 5\cos^2(\theta)\sin(\theta)$

e) $r = 10\sin(\theta)$

Question 6

You did not answer the question.

Write the equation in polar coordinates.

$$(x - 7)^2 + y^2 = 49$$

a) $r = 7\sin(\theta) + 49$

b) $r = 14\sin(\theta)$

c) $r = 14\cos(\theta)$

d) $r = 7\cos^2(\theta)\sin(\theta)$

e) $r = 49$

Question 7

You did not answer the question.

Write the equation in rectangular coordinates.

$$2r\cos(\theta) = 9$$

a) $x^2 = 9$

b) $y = \frac{9}{2}$

c) $x = \frac{2}{9}$

d) $y = \frac{3}{2}$

e) $x = \frac{9}{2}$

Question 8

You did not answer the question.

Write the equation in rectangular coordinates.

$$r = 6\sin(\theta)$$

a) $x^2 + y^2 = 6$

b) $x^2 + y^2 = 36$

c) $y = x^2 + 6$

d) $x = y + 6$

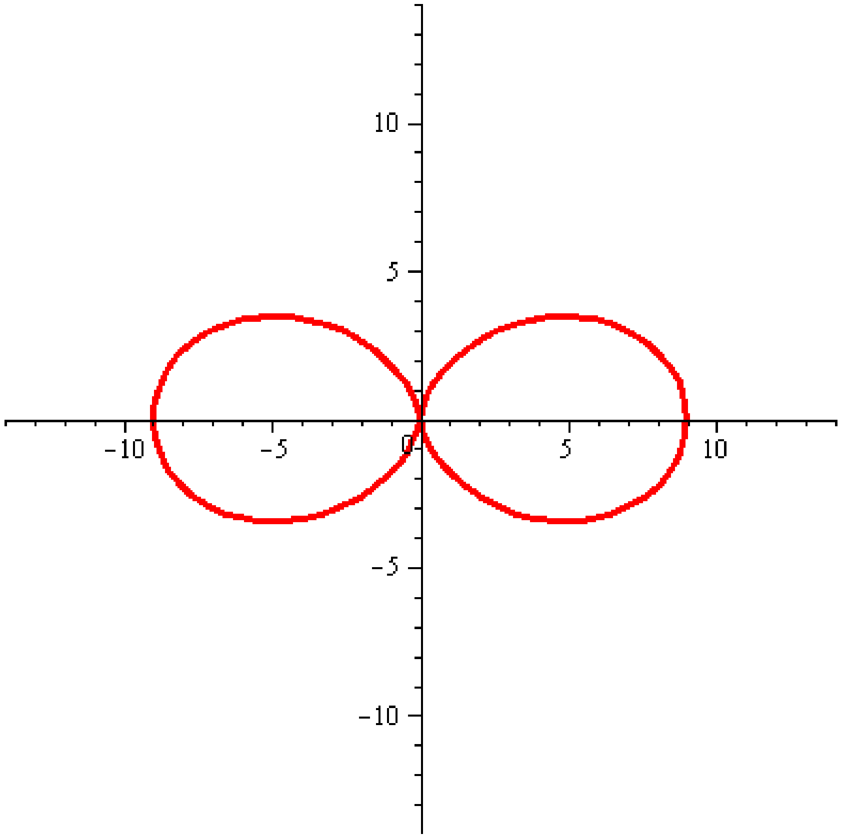
e) $x^2 + y^2 = 6y$

Question 9

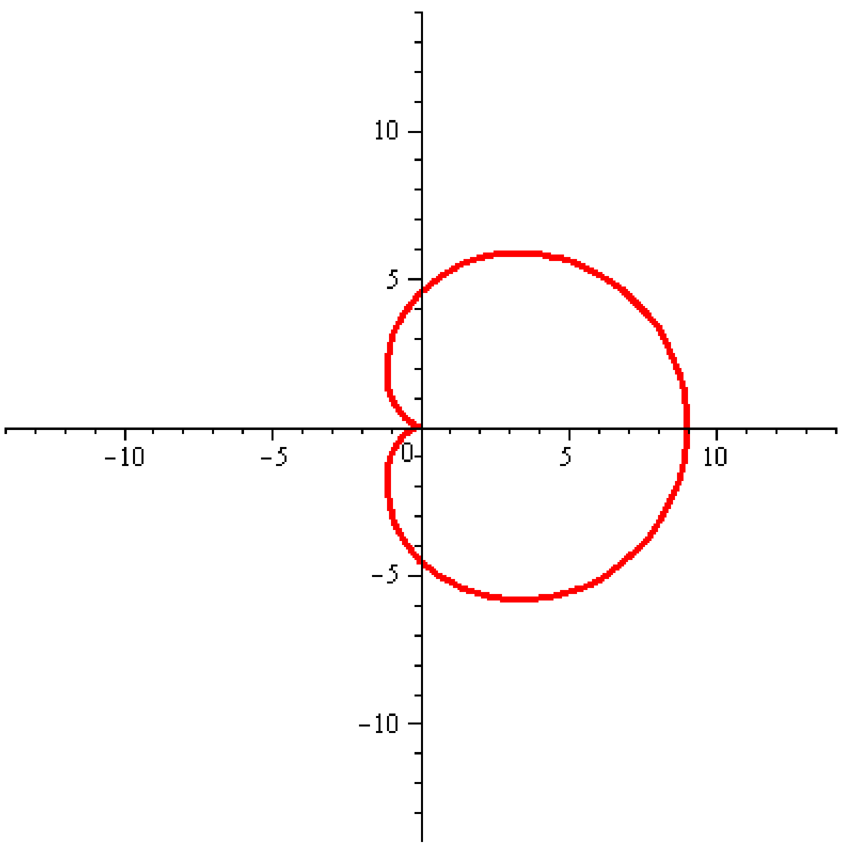
You did not answer the question.

Which of the following shows the correct sketch of the given polar curve?

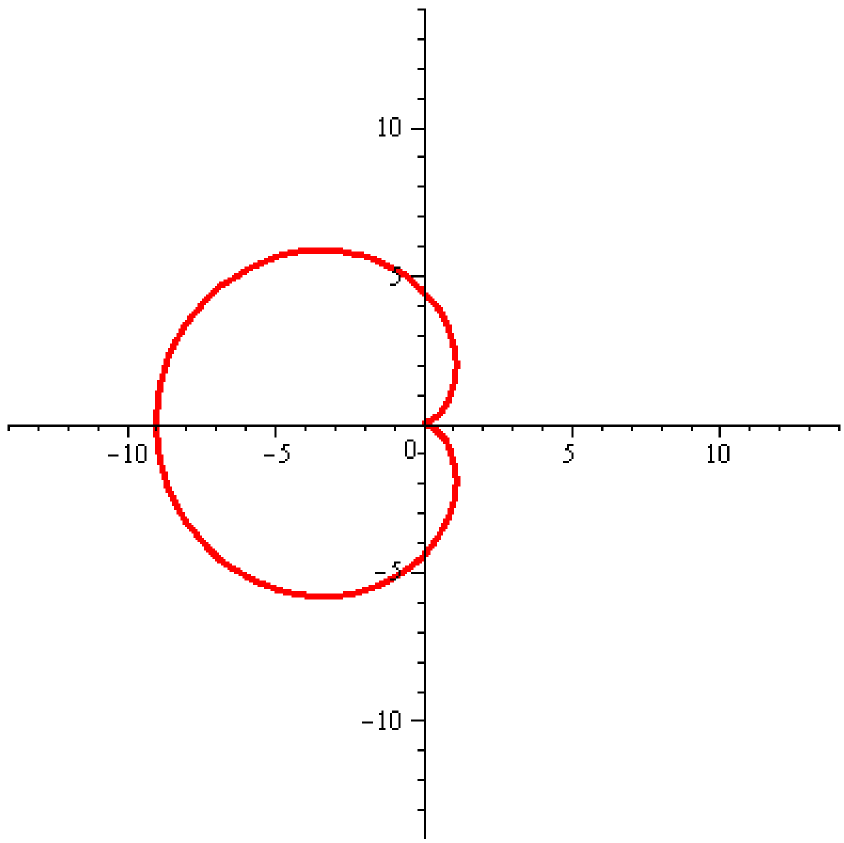
$$r = \frac{9}{2} - \frac{9}{2}\cos(\theta)$$



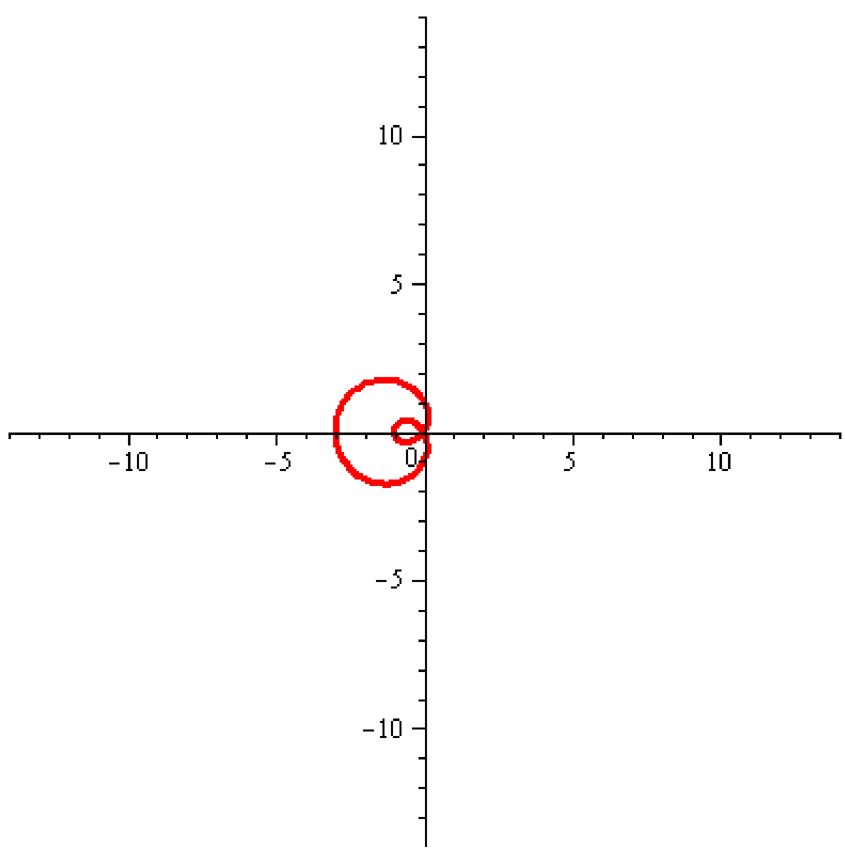
a)



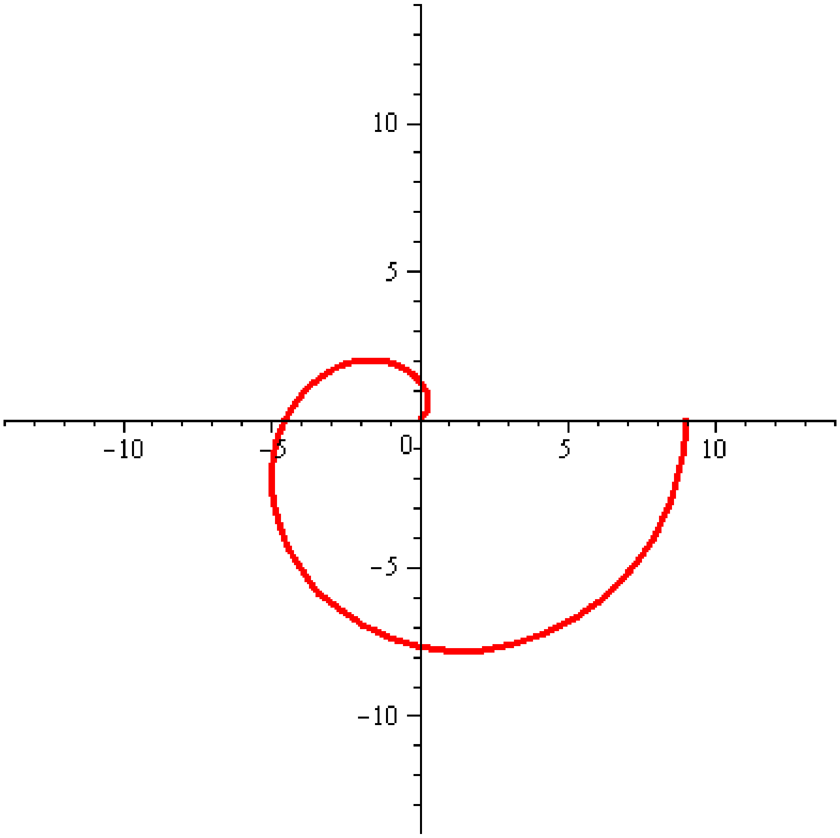
b)



c)



d)



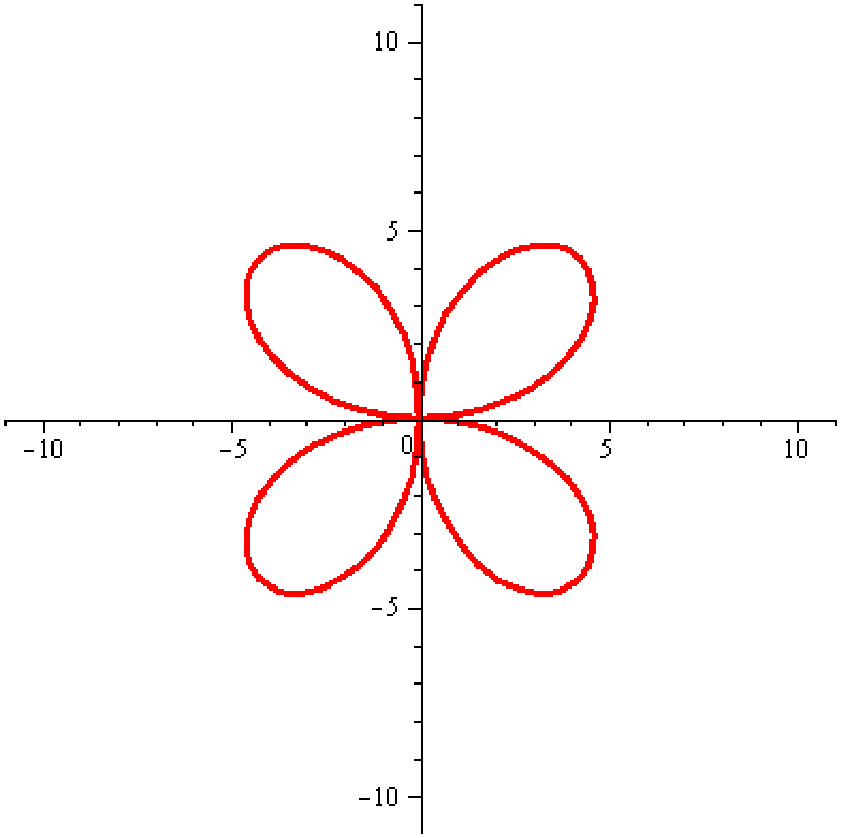
e)

Question 10

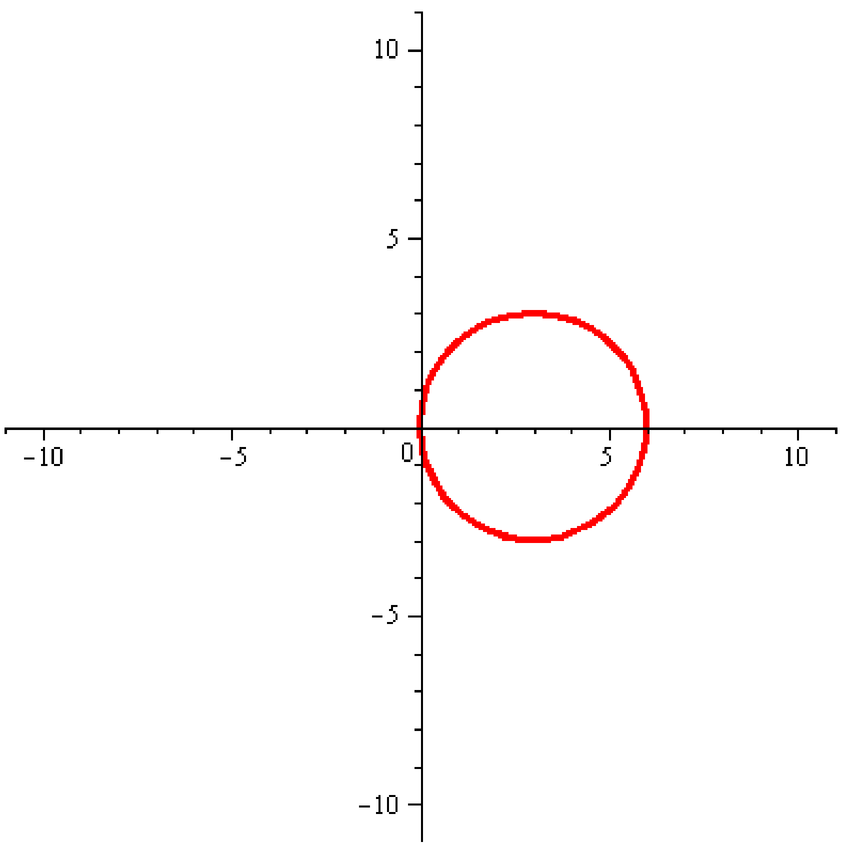
You did not answer the question.

Which of the following shows the correct sketch of the given polar curve?

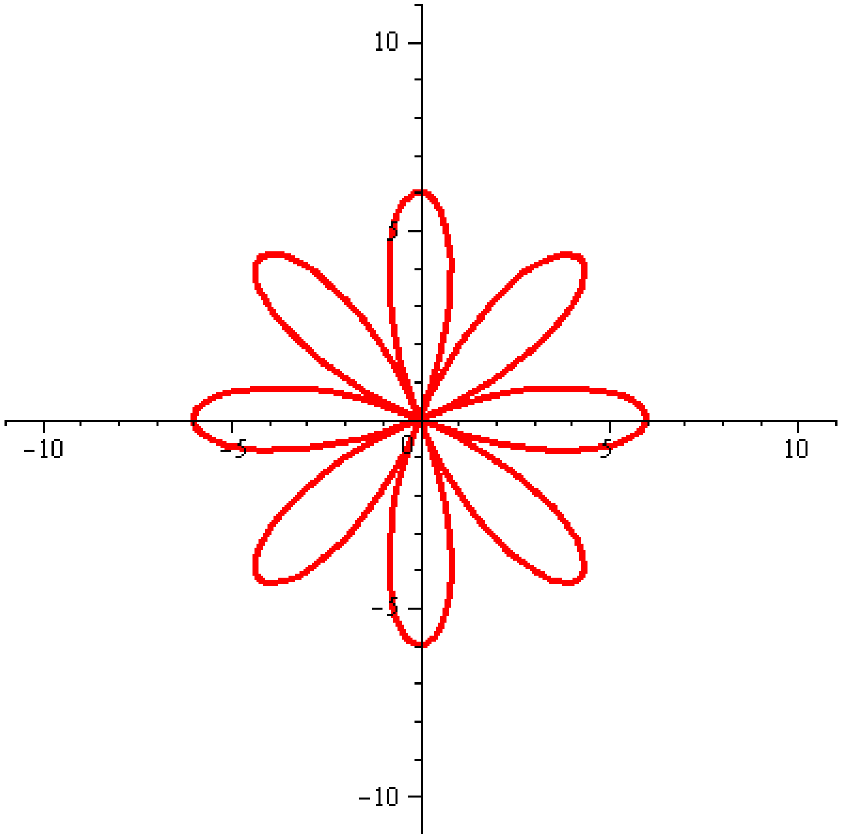
$$r = 6\cos(2\theta)$$



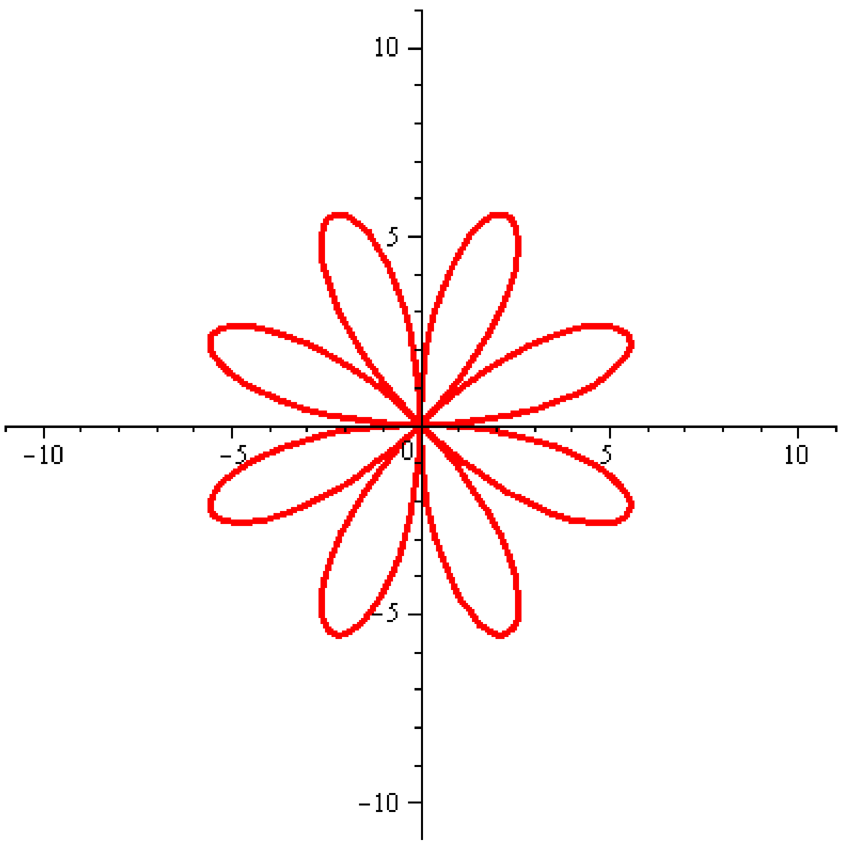
a)



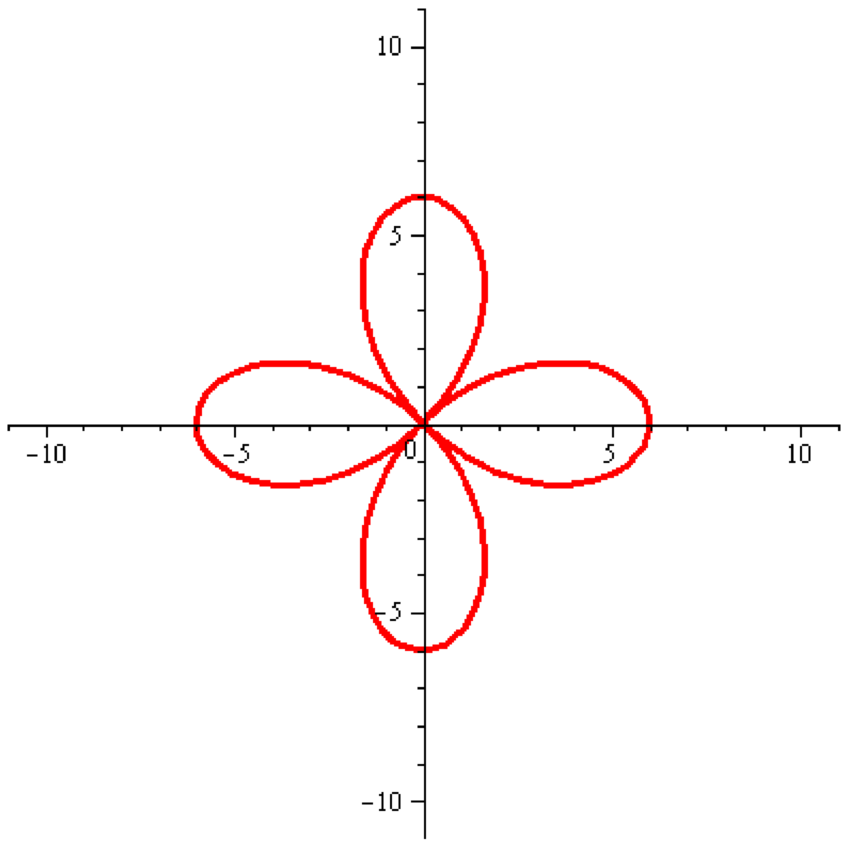
b)



c)



d)



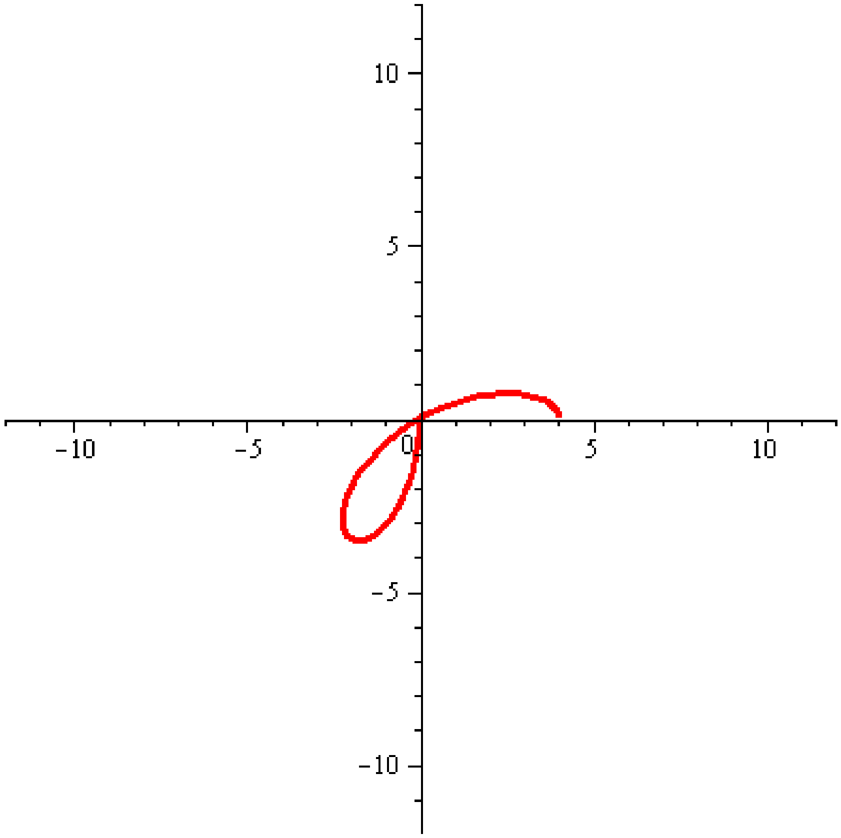
e)

Question 11

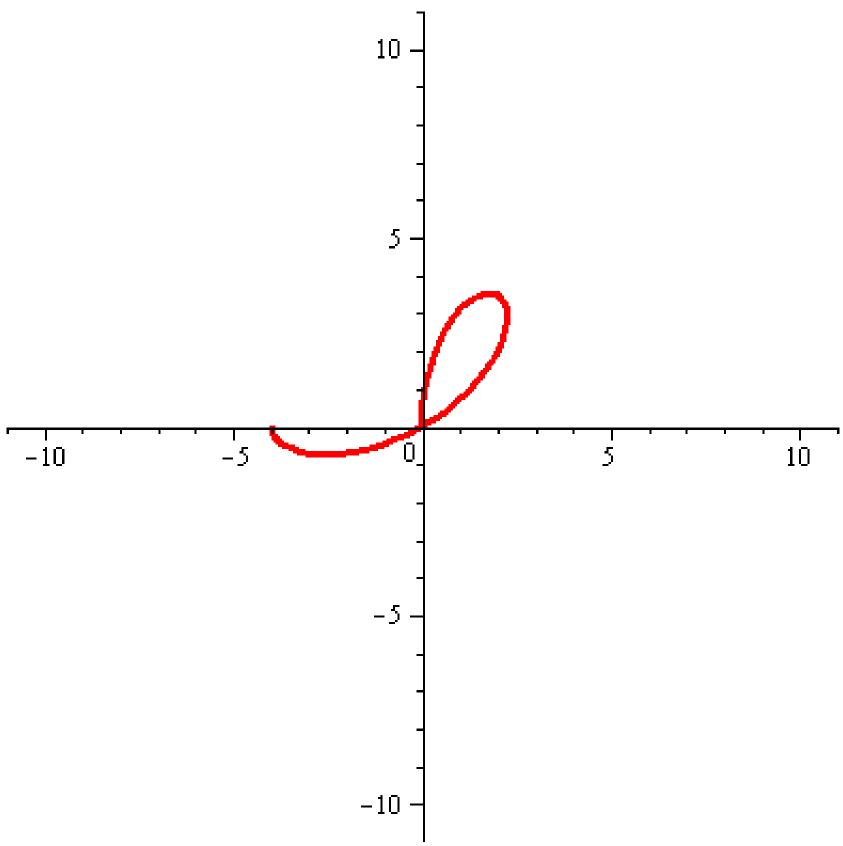
You did not answer the question.

Which of the following shows the correct sketch of the polar curve given ($0 \leq \theta \leq \frac{1}{2}\pi$)?

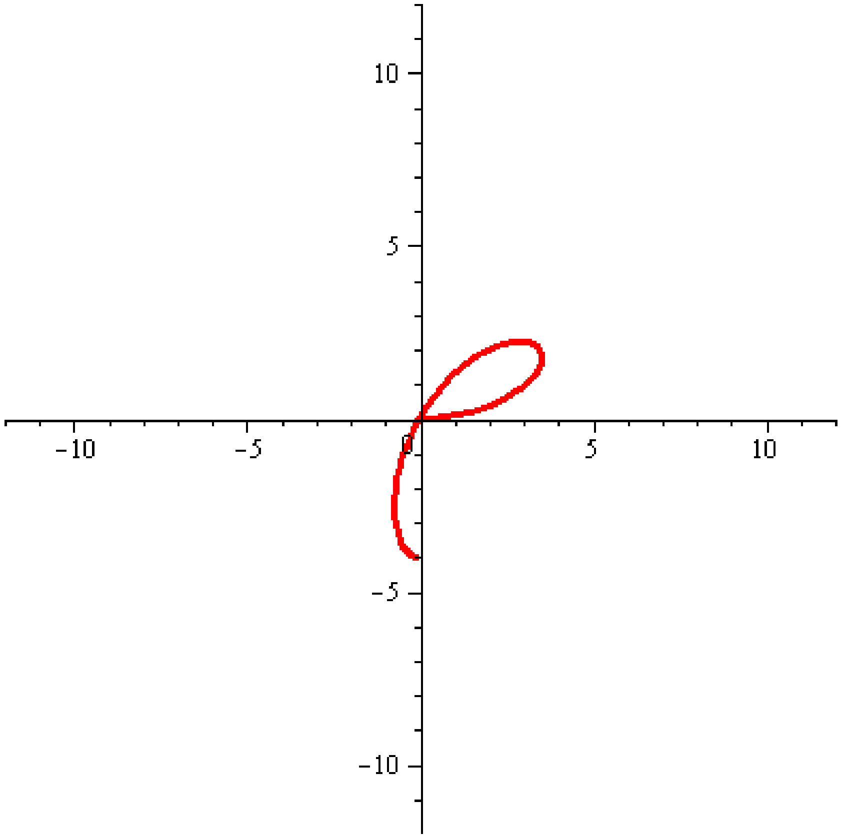
$$r = -4\cos(3\theta)$$



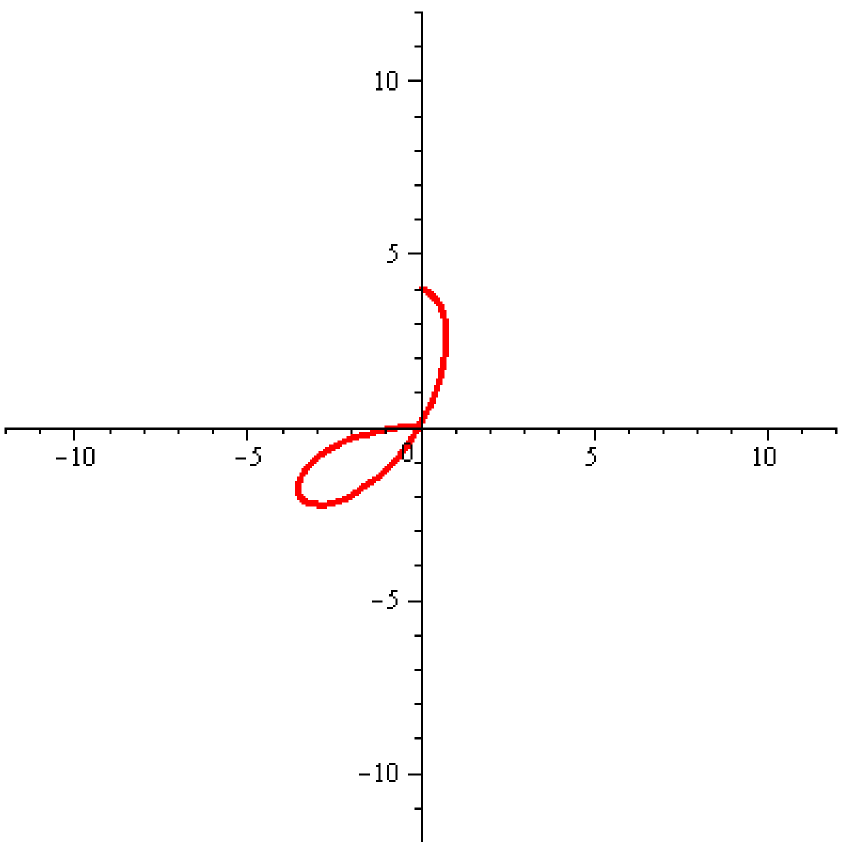
a)



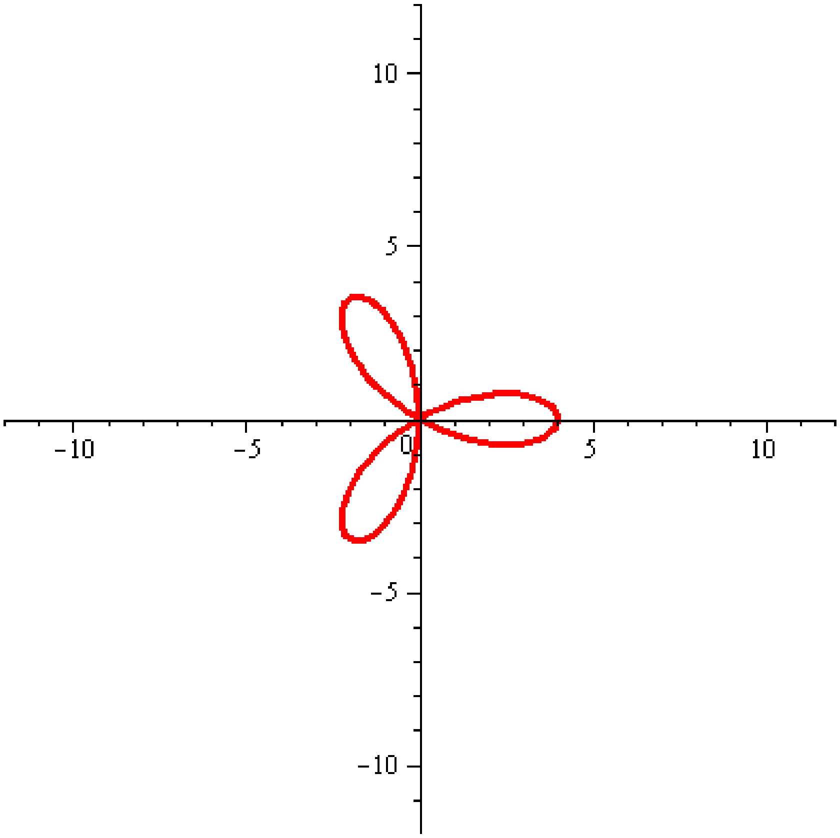
b)



c)



d)



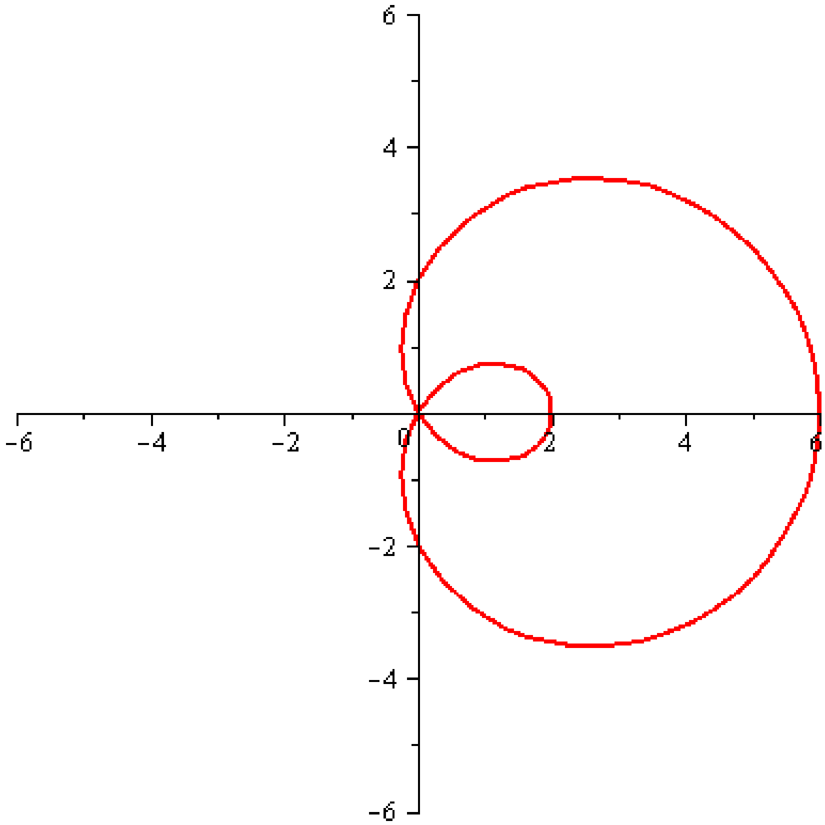
e)

Question 12

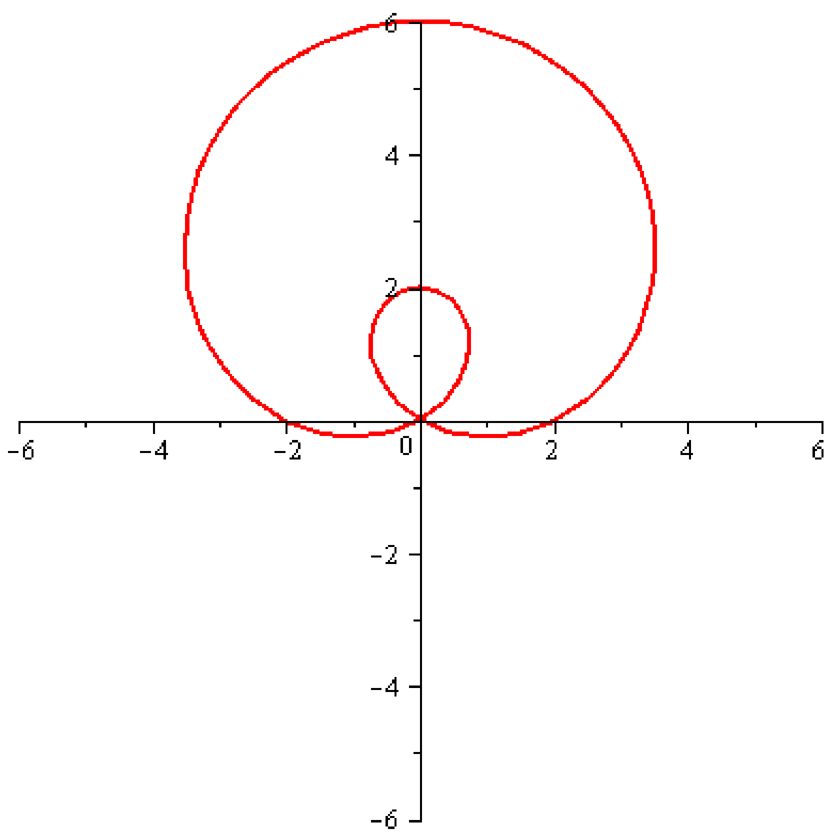
You did not answer the question.

Which of the following shows the correct sketch of the given polar curve?

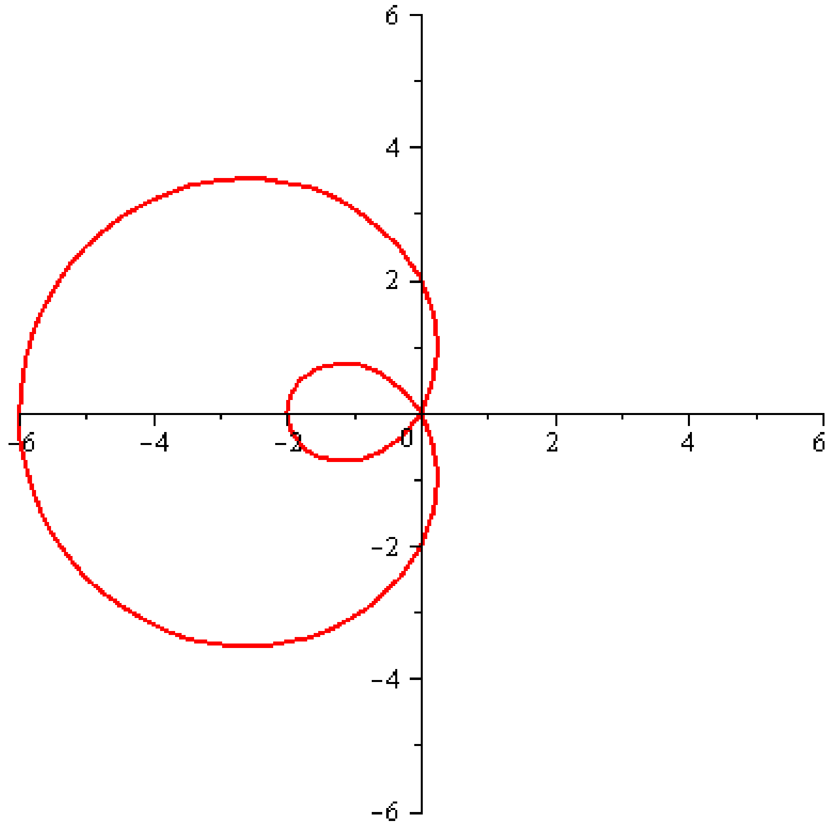
$$r = -2 + 4\cos(t)$$



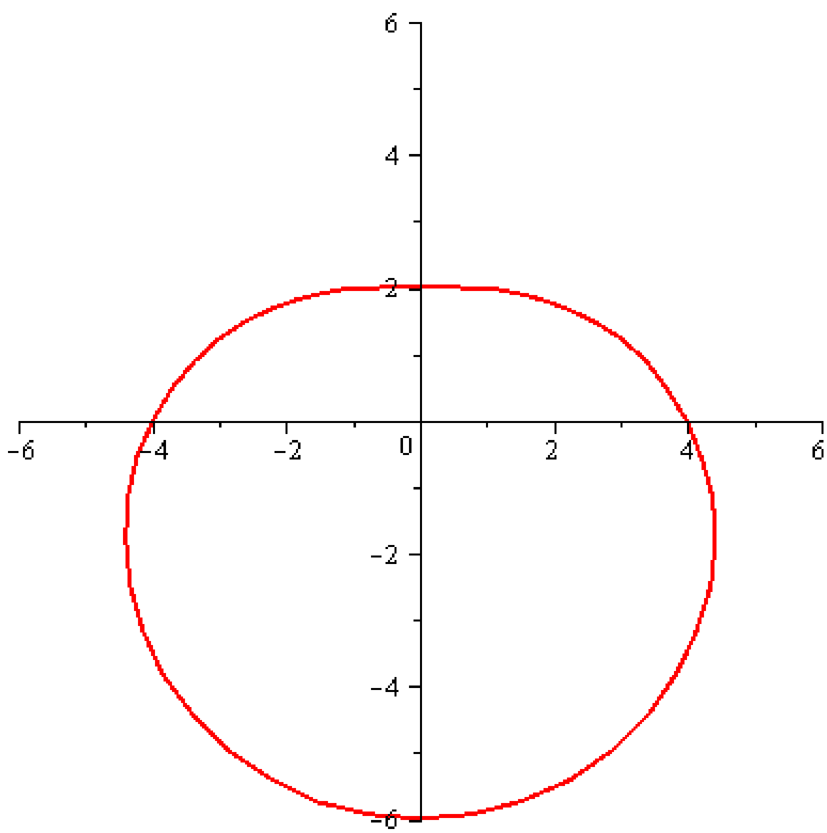
a)



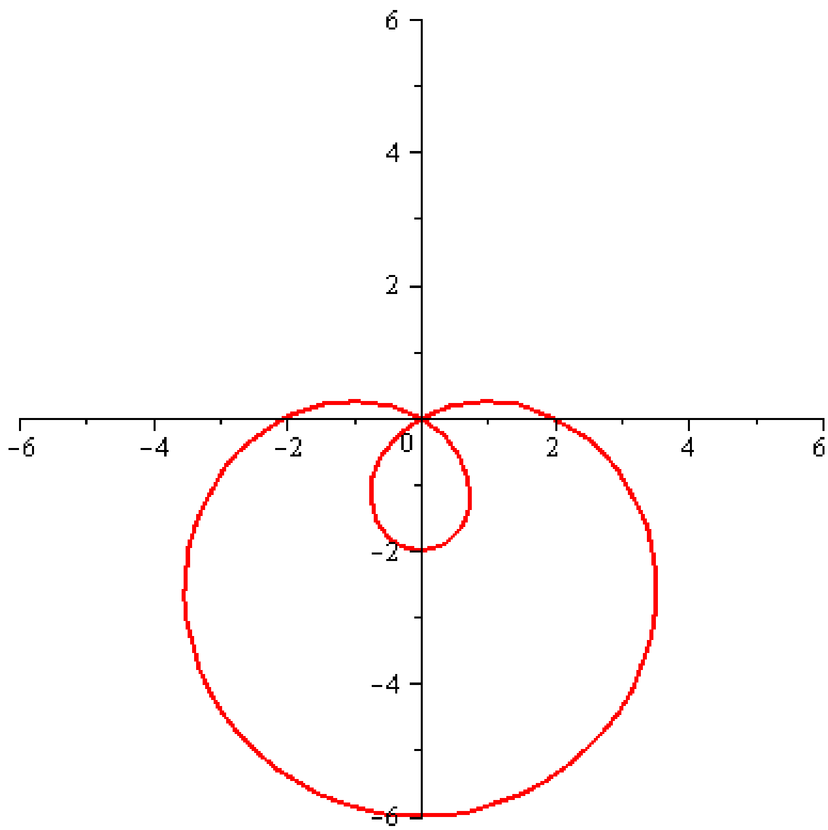
b)



c)



d)



e)

Question 13

You did not answer the question.

Find the rectangular coordinates of the point(s) of intersection of the following polar curves.

$$r = 4\sin(\theta)$$
$$r = -4\cos(\theta)$$

a) $(-2, 2)$

b) $[(0, 0), (-2, 2)]$

c) $[(1, 1), (-2, 2)]$

d) $(0, 0)$

e) $[(0, 0), (-4, 4)]$

Question 14

You did not answer the question.

Calculate the area enclosed by $r^2 = 25\sin^2(\theta)$.

a) $\frac{25}{2}\pi$

b) $\frac{25}{3}\pi$

c) $25\,\pi$

d) $\frac{75}{2}\pi$

e) $\frac{75}{4}\pi$

Question 15

You did not answer the question.

Calculate the area of the given region:

$$r = 3\cos(\theta)$$
$$r = 3\sin(\theta)$$

and the rays: $\theta = 0$ and $\theta = \frac{1}{4}\pi$

a) $\frac{9}{2}$

b) $\frac{9}{4}$

c) $\frac{27}{8}$

d) $\frac{27}{4}$

e) $\frac{3}{2}$

Question 16

You did not answer the question.

Calculate the area of the given region:

$$r = 22\cos(\theta)$$

$$r = 11\cos(\theta)$$

and the rays: $\theta = 0$ and $\theta = \frac{1}{4}\pi$

a) $\frac{1089}{16} + \frac{1089}{32}\pi$

b) $\frac{363}{8} + \frac{363}{16}\pi$

c) $\frac{1089}{8} + \frac{1089}{16}\pi$

d) $\frac{363}{4} + \frac{363}{8}\pi$

e) $\frac{121}{4} + \frac{121}{8}\pi$

Question 17

You did not answer the question.

Which of the following represents the area outside $r = 12$, but inside $r = 24\sin(\theta)$?

a) $\displaystyle\int_{\frac{1}{6}\pi}^{\frac{5}{6}\pi} \frac{1}{2}\left((12)^2 - (24\sin(\theta))^2\right) d\theta$

b) $\displaystyle\int_{\frac{1}{6}\pi}^{\frac{5}{6}\pi} \frac{1}{2}\left((24\sin(\theta))^2 - (12)^2\right) d\theta$

c) $\displaystyle\int_{\frac{1}{4}\pi}^{\frac{3}{4}\pi} \frac{1}{2}\left((24\sin(\theta))^2 - (12)^2\right) d\theta$

d) $$\int_{\frac{1}{3}\pi}^{\frac{2}{3}\pi} \frac{1}{2}\left(\left(24\sin(\theta)\right)^2-(12)^2\right)d\theta$$

e) $$\int_{\frac{1}{3}\pi}^{\frac{2}{3}\pi} \frac{1}{2}\left((12)^2-\left(24\sin(\theta)\right)^2\right)d\theta$$

Question 18

You did not answer the question.

Which of the following represents the area inside $r = 5$, but outside $r=10\cos\theta$?

a) $$\int_{\frac{1}{3}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left((5)^2-\left(10\cos(\theta)\right)^2\right)d\theta$$

b) $$2\left(\int_{\frac{1}{3}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left((5)^2-\left(10\cos(\theta)\right)^2\right)d\theta\right)+2\left(\int_{\frac{1}{2}\pi}^{\pi} \frac{1}{2}\left((5)^2\right)d\theta\right)$$

c) $$\int_{\frac{1}{6}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left((5)^2-\left(10\cos(\theta)\right)^2\right)d\theta$$

d) $$2\left(\int_{\frac{1}{3}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left((5)^2-\left(10\cos(\theta)\right)^2\right)d\theta\right)-\left(\int_{\frac{1}{2}\pi}^{\pi} \frac{1}{2}\left((5)^2\right)d\theta\right)$$

e) $$\int_{\frac{1}{3}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left((5)^2-\left(10\cos(\theta)\right)^2\right)d\theta+\int_{\frac{1}{2}\pi}^{\pi} \frac{1}{2}\left((5)^2\right)d\theta$$

Question 19

You did not answer the question.

Which of the following represents the area inside the inner loop of $r = 8 - 16\sin(\theta)$?

a) $$\int_{\frac{1}{4}\pi}^{\frac{3}{4}\pi} \frac{1}{2}\left(8 - 16\sin(\theta)\right)^2 d\theta$$

b) $$\int_{\frac{1}{3}\pi}^{\frac{2}{3}\pi} \frac{1}{2}\left(8 - 16\sin(\theta)\right)^2 d\theta$$

c) $$\int_{\frac{1}{6}\pi}^{\frac{5}{6}\pi} \frac{1}{2}\left(8 - 16\sin(\theta)\right)^2 d\theta$$

d) $$\int_{\frac{1}{3}\pi}^{\frac{4}{3}\pi} \frac{1}{2}\left(8 - 16\sin(\theta)\right)^2 d\theta$$

e) $$\int_{\frac{1}{6}\pi}^{\frac{7}{6}\pi} \frac{1}{2}\left(8 - 16\sin(\theta)\right)^2 d\theta$$

Question 20

You did not answer the question.

Which of the following represents the area interior to both $r = 8 - 8\sin(\theta)$ and $r = 8\sin(\theta)$?

a) $$2\left(\int_{0}^{\frac{1}{3}\pi} \frac{1}{2}\left(8\sin(\theta)\right)^2 d\theta + \int_{\frac{1}{3}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left(8 - 8\sin(\theta)\right)^2 d\theta\right)$$

b) $$\int_{0}^{\frac{1}{6}\pi} \frac{1}{2}\left(8\sin(\theta)\right)^2 d\theta + \int_{\frac{1}{6}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left(8-8\sin(\theta)\right)^2 d\theta$$

c) $$2\left(\int_{0}^{\frac{1}{6}\pi} \frac{1}{2}\left(8\sin(\theta)\right)^2 d\theta + \int_{\frac{1}{6}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left(8-8\sin(\theta)\right)^2 d\theta\right)$$

d) $$2\left(\int_{0}^{\frac{1}{4}\pi} \frac{1}{2}\left(8-8\sin(\theta)\right)^2 d\theta + \int_{\frac{1}{4}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left(8\sin(\theta)\right)^2 d\theta\right)$$

e) $$2\left(\int_{0}^{\frac{1}{6}\pi} \frac{1}{2}\left(8-8\sin(\theta)\right)^2 d\theta + \int_{\frac{1}{6}\pi}^{\frac{1}{2}\pi} \frac{1}{2}\left(8\sin(\theta)\right)^2 d\theta\right)$$