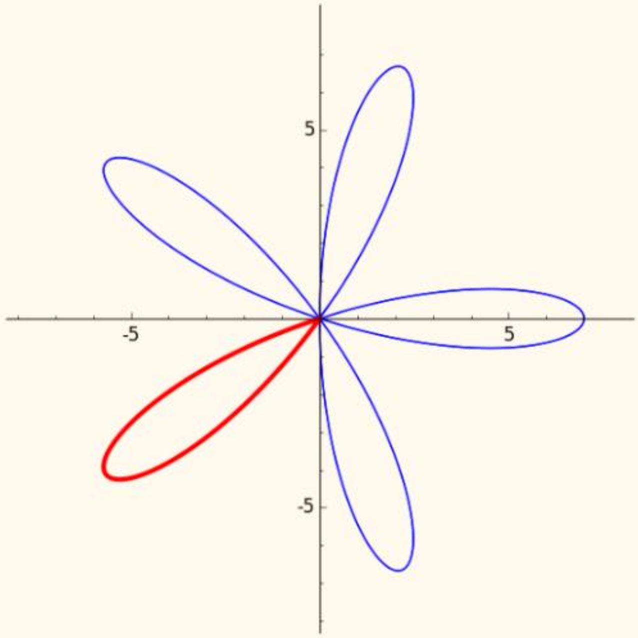
Q1

Wednesday, October 18, 2017 8:49 AM

(0.31415926535897937, 0.94247779607693816)

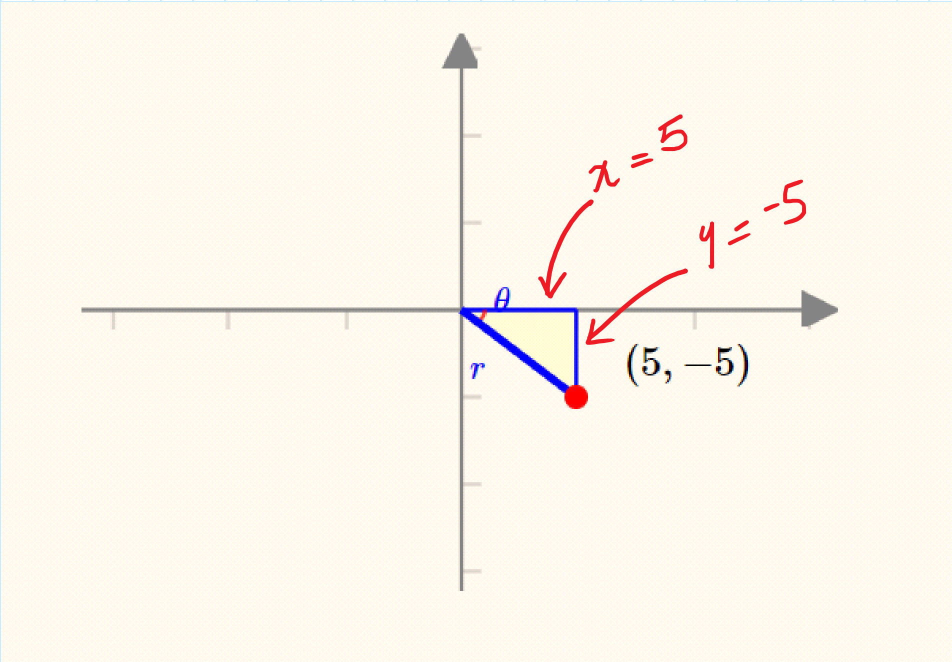


$18.00^o \leq \theta \leq 54.00^o$

A) find an approximate range corresponding to the highlighted portion of the graph.

Q2

Saturday, May 2, 2020 8:15 PM



$$r = \sqrt{5^2 + (-5)^2}$$
$$= \sqrt{25 + 25}$$
$$= \sqrt{50}$$
$$r = 5\sqrt{2}$$

$$\theta = \tan^{-1}\left(\frac{-5}{5}\right)$$
$$\theta = -45^\circ$$

$$\left(5\sqrt{2}, -45^\circ\right)$$

$$\boxed{A)\ r = \sqrt{5^2 + -5^2},\ \theta = \arctan\left(\frac{-5}{5}\right)}$$

Q3

Saturday, May 2, 2020 8:41 PM

Consider the following trigonometric equation

$$\frac{2\sin(x)}{2\cos(x)+1} = \frac{\sqrt{3}}{2}$$

In this equation assume x lies between 0 and 90 degrees. oh and a hint: maybe leave this one for last

A) $x = 60^\circ$ is the only solution in the $0 < x < 90$ deg range

c) the substitution $t = \tan\left(\frac{x}{2}\right)$

D) the identity $\cos^2(x) = 1 - \sin^2(x)$

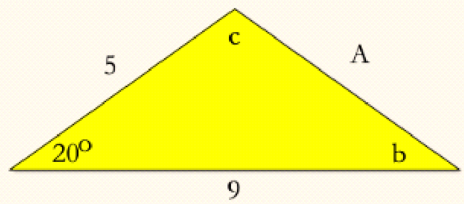
Q4

Saturday, May 2, 2020 8:47 PM

applying the Law of Sines would yield

$$\frac{\sin(b)}{9} = \frac{\sin(20^o)}{A}$$

This would be....



The Law of Sines says that in any given triangle, the ratio of any side length to the sine of its opposite angle is the same for all three sides of the triangle. This is true for *any* triangle, not just right triangles.

The Law of Sines is written formally as

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

From <https://www.mathopenref.com/lawofsines.html>

~~A) legal~~

$\boxed{\text{c) incorrect}}$

Q5

Saturday, May 2, 2020 8:52 PM

Practice Work on each side: Determine if the following is an identity, prove your answer: $\frac{1}{1-2\sin^2 x} = \frac{1}{2\cos^2 x - 1}$

$\cos(2a) = 1 - 2\sin^2 x$ (Double Angle Identity)

$= 2\cos^2 x - 1$

$$\frac{1}{1-2\sin^2 x} = \frac{1}{2\cos^2 x - 1}$$

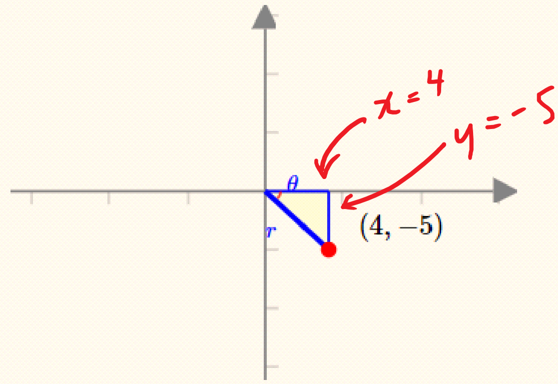
$$\frac{1}{\cos(2a)} = \frac{1}{\cos(2a)}$$

$\boxed{\text{A) True}}$

Q6

Saturday, May 2, 2020 8:52 PM

Convert the cartesian coordinates, (4, -5) , to Polar Coordinates



$r = \sqrt{4^2 + (-5)^2}$

$= \sqrt{16 + 25}$

$r = \sqrt{41}$ or

$= -\sqrt{41}$

$\theta = \tan^{-1}\left(\frac{-}{4}\right)$

$\theta = -51.34°$ or

$= 180° + 51.34°$

$= 128.66°$

$(\sqrt{41}, -51.34)$ & $(-\sqrt{41}, 128.66°)$

A) $r = \sqrt{4^2 + -5^2}$, $\theta = \arctan\left(\frac{-5}{4}\right)$

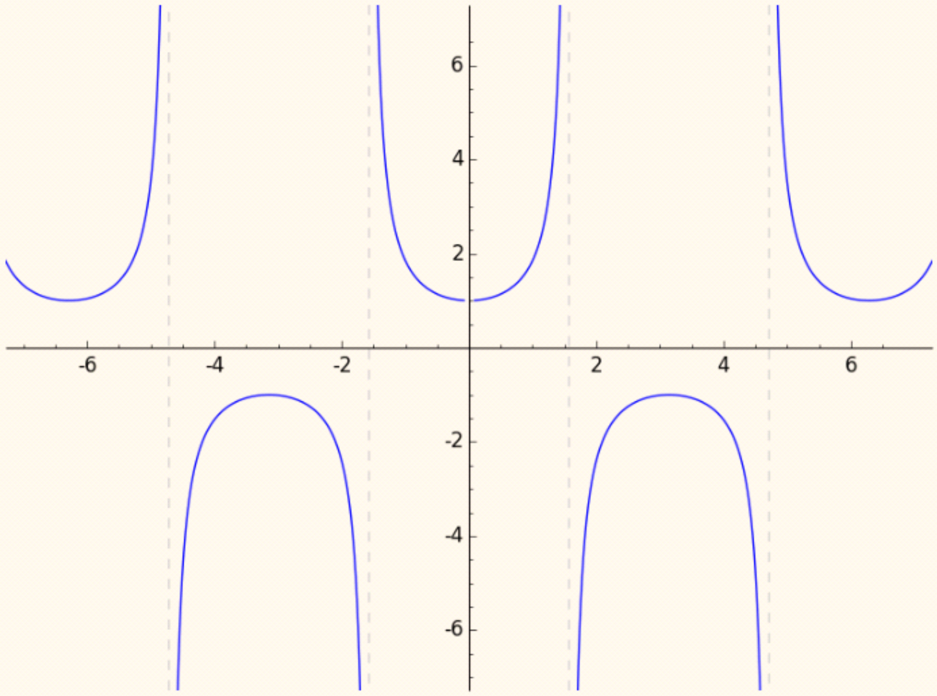
c) $r = \sqrt{41}$, $\theta = -51.34°$

D) $r = -\sqrt{41}$, $\theta = 128.7°$

Q7

Saturday, May 2, 2020 8:52 PM

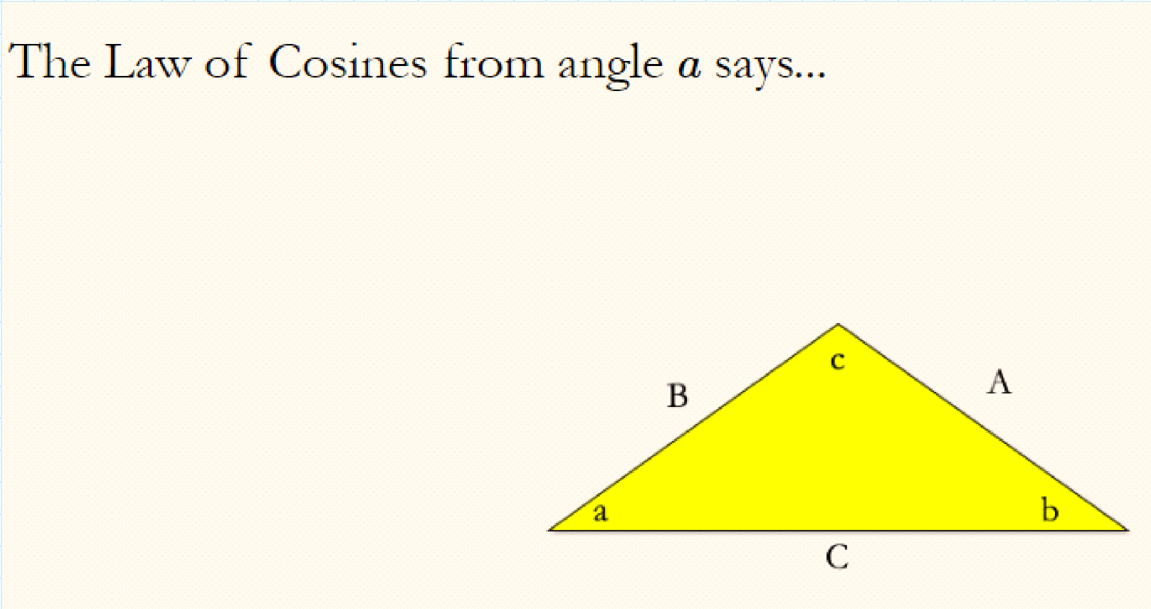
Match the graph with the equation



$$\boxed{c)\ y = \sec(x)}$$

Q8

Saturday, May 2, 2020 8:52 PM



The Law of Cosines is a tool for solving triangles. That is, given some information about the triangle we can find more. In this case the tool is useful when you know two sides and their included angle. From that, you can use the Law of Cosines to find the third side. It works on any triangle, not just right triangles.

The Law of Cosines is written formally as

$$c^2 = a^2 + b^2 - 2ab\cos(C)$$

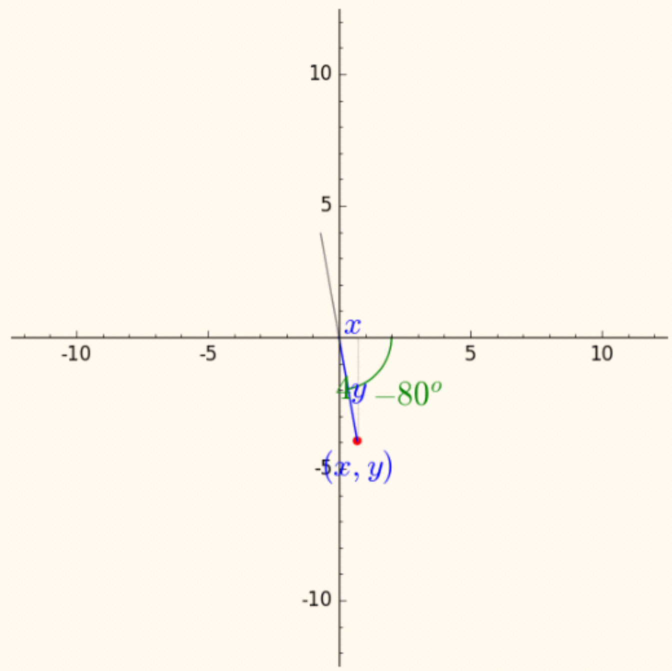
From <https://www.mathopenref.com/lawofcosines.html>

$$\boxed{\text{A) } A^2 = B^2 + C^2 - 2BC\cos(a)}$$

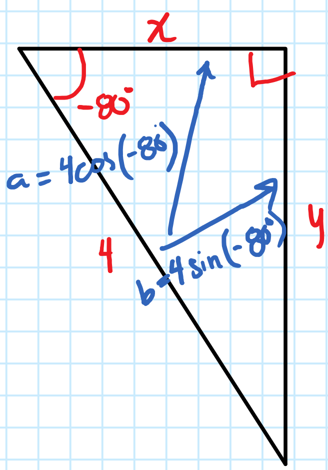
Q9

Saturday, May 2, 2020 8:52 PM

Convert From Polar to cartesian



note $r = 4$ and $\theta = -80$



B) $x = 4\cos(-80°)$, $y = 4\sin(-80°)$

c) $x = r\cos(\theta)$, $y = r\sin(\theta)$

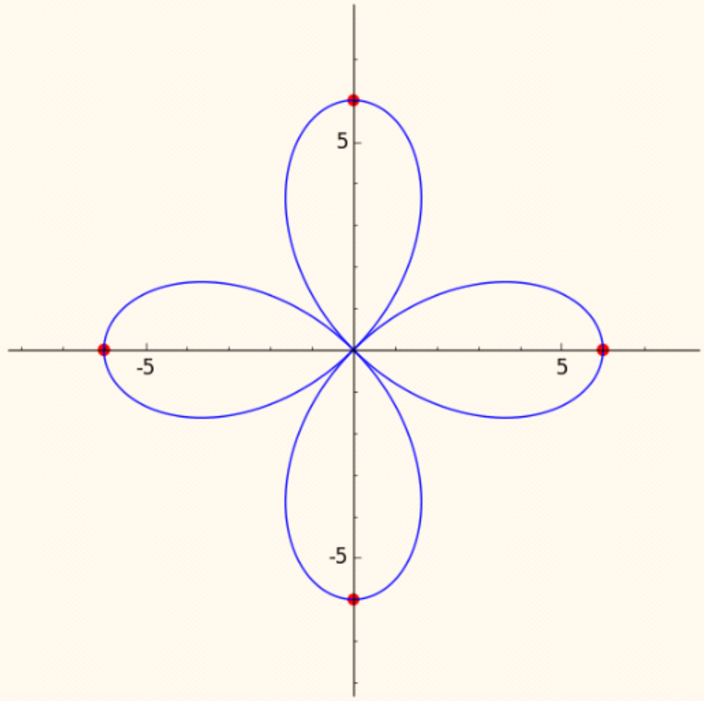
$x = 4\cos(-80°)$

$y = 4\sin(-80°)$

Q10

Saturday, May 2, 2020 8:52 PM

find the highlighted points over the 0 to 360^o range



$$r = 3\ \cos(2\,\theta)$$

$\boxed{c)\ [180.0, 270.0, 360.0, 90.00]}$

Q11

Saturday, May 2, 2020 8:52 PM

for any value α and any value $\square$ within the respective domain

$$-2\sin\left(\frac{\alpha+\square}{2}\right)\sin\left(\frac{\alpha-\square}{2}\right)$$

is interchangeable with

sum-to-product identity

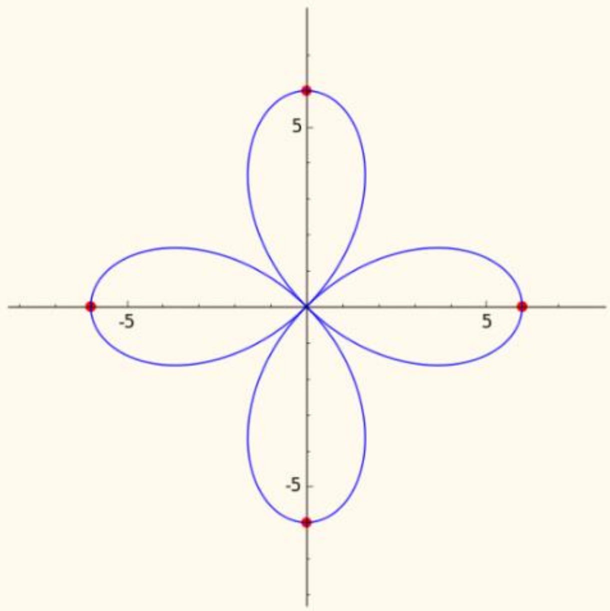
$$\cos(a)-\cos(b)=-2\sin\left(\frac{a+b}{2}\right)\cos\left(\frac{a-b}{2}\right)$$

$$\boxed{B)\ \cos(\alpha)-\cos(\square)}$$

Q12

Saturday, May 2, 2020 8:52 PM

One way to generally find ALL tips of the pedals [such as ALL the highlighted points below] is to find would be



$r = 7\cos(2\theta)$

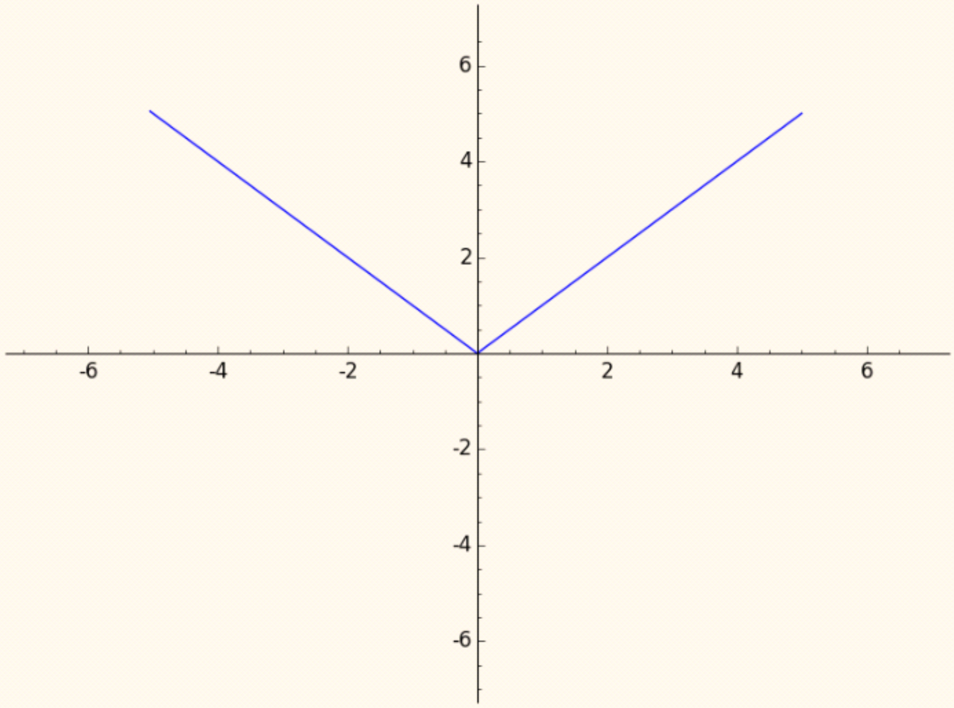
B) find all solutions to the equations $7 = 7\cos(2x)$ and $-7=7\cos(2x)$

~~C) find angles where r = 0~~

Q13

Saturday, May 2, 2020 8:52 PM

Match the graph with the equation

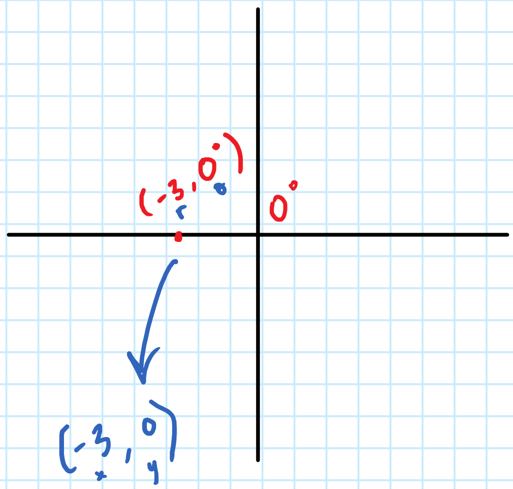


B) $y = |x|$

Q14

Saturday, May 2, 2020 8:52 PM

Find the Cartesian coordinates of the given polar coordinates. $(-3, 0)$

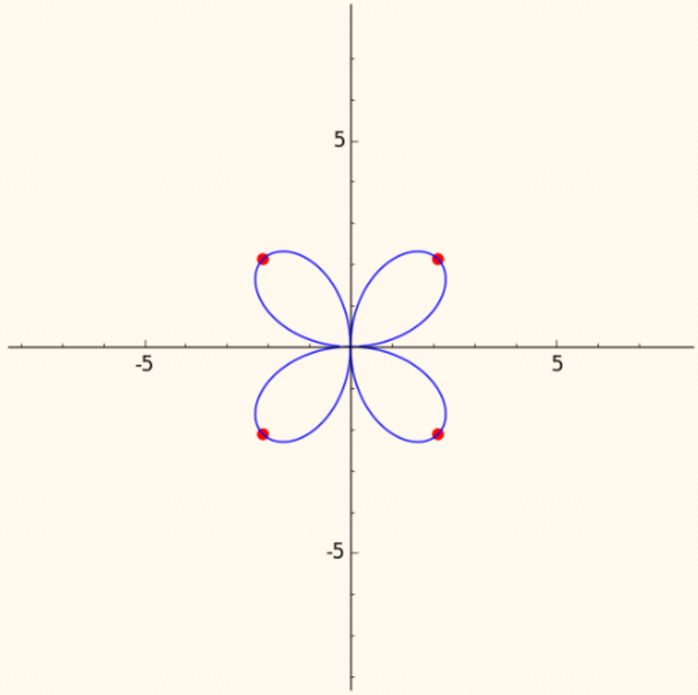


A) $(-3, 0)$

Q15

Saturday, May 2, 2020 8:52 PM

find the highlighted points over the 0 to **360**^{o} range



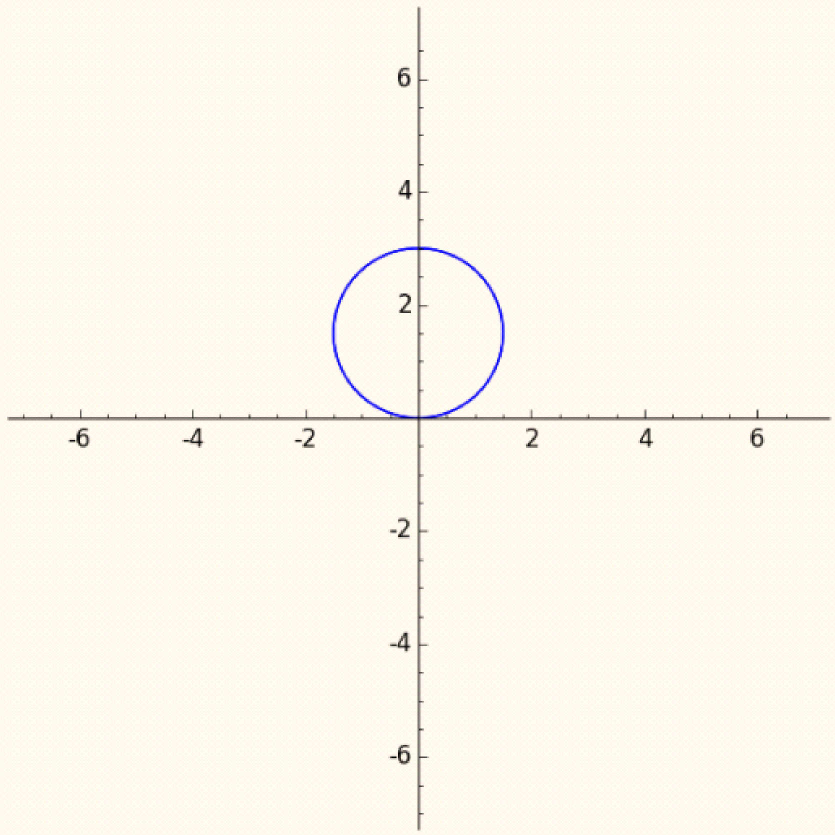
$$r = 3\ \sin(2\,\theta)$$

B) [135.0, 225.0, 315.0, 45.00]

Q16

Saturday, May 2, 2020 8:52 PM

Match the graph with the equation



$$\boxed{A)\quad r = 3\sin(\theta)}$$

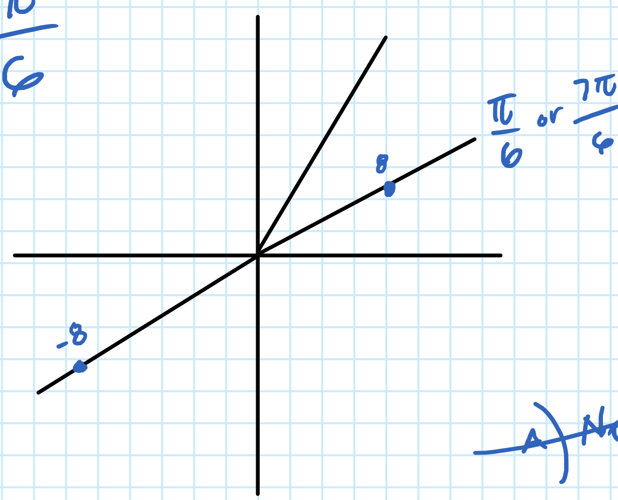
Q17

Saturday, May 2, 2020 8:52 PM

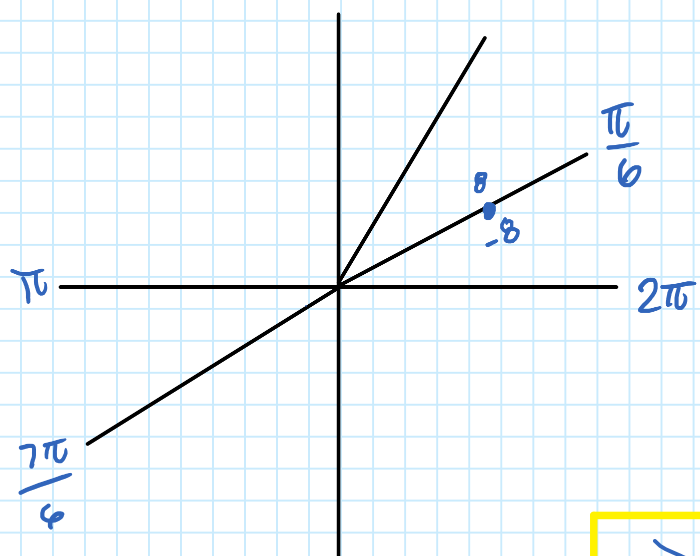
Determine if the given polar coordinates represent the same point.

$$(8, \pi/6), (-8, 7\pi/6)$$

$$\frac{7\pi}{6} = \frac{\pi}{6}$$



~~A) No~~

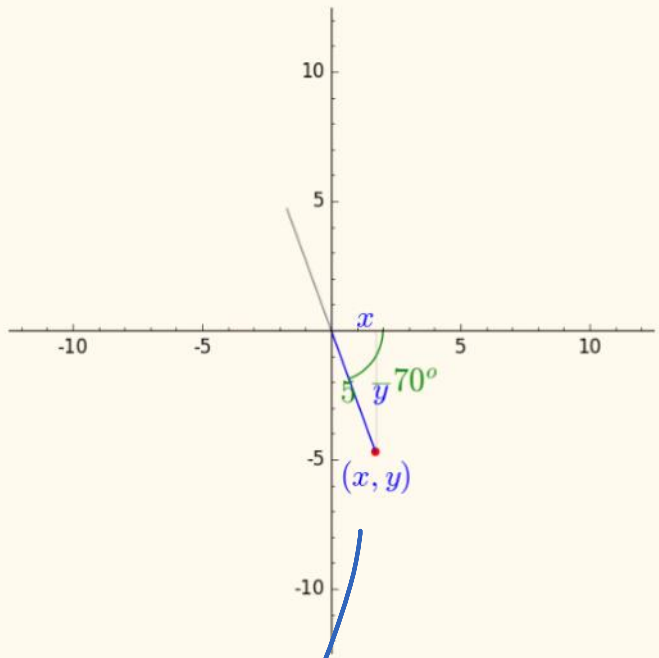


$\boxed{\text{B) Yes}}$

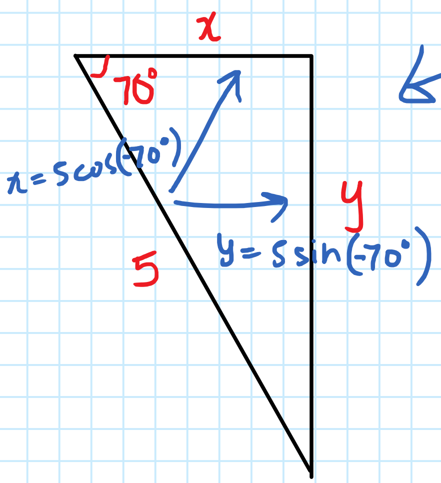
Q18

Saturday, May 2, 2020 8:52 PM

Convert From Polar to cartesian



note $r = 5$ and $\theta = -70$



A) $x = r\cos(\theta)$, $y = r\sin(\theta)$

B) $x = 5\cos(-70°)$, $y = 5\sin(-70°)$

$x = 5\cos(70°)$

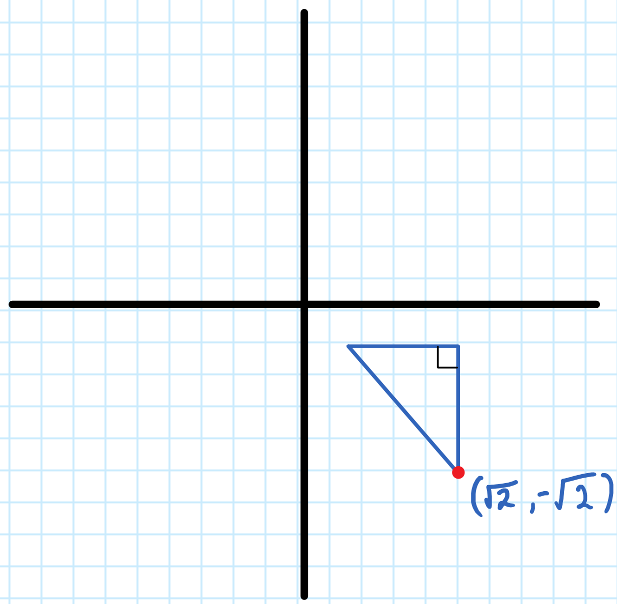
$y = 5\sin(70°)$

Q19

Saturday, May 2, 2020 8:52 PM

Find the polar coordinates, $0 \leq \theta < 2\pi$ and $r \geq 0$, of the point given in Cartesian coordinates.

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



$$r^2 = (\sqrt{2})^2 + (-\sqrt{2})^2$$
$$= 2 + 2$$
$$r = \sqrt{4}$$
$$r = 2$$

$$\theta = \tan^{-1}\left(\frac{-\sqrt{2}}{\sqrt{2}}\right)$$
$$= -45°$$
$$= -45 + 360°$$

Get positive counter part

$$= 315° \cdot \frac{\pi}{180}$$

convert to radians

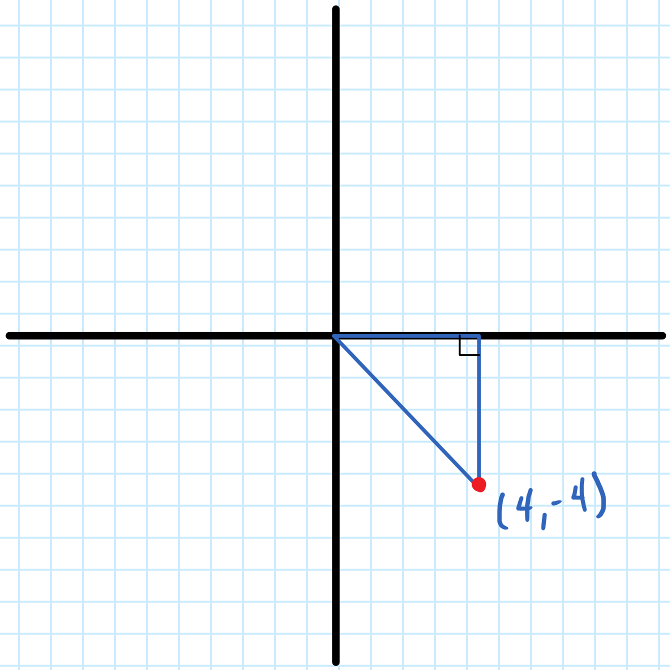
$$= \frac{315\pi}{180}$$
$$\theta = \frac{7\pi}{4}$$

$$\boxed{B)\ \left(2, \frac{7\pi}{4}\right)}$$

Q20

Saturday, May 2, 2020 8:52 PM

Find the polar coordinates, $0 \le \theta < 2\pi$ and $r \ge 0$, of the point given in Cartesian coordinates. $(4, -4)$



$r = \sqrt{(4)^2 + (-4)^2}$

$= \sqrt{16 + 16}$

$= \sqrt{32}$

$r = 4\sqrt{2}$

$\theta = \tan^{-1}\left(\frac{-4}{4}\right)$

$= -45° + 360$ get the positive counterpart

$= 315° \cdot \frac{\pi}{180}$ convert to radians

$= \frac{315\pi}{180}$

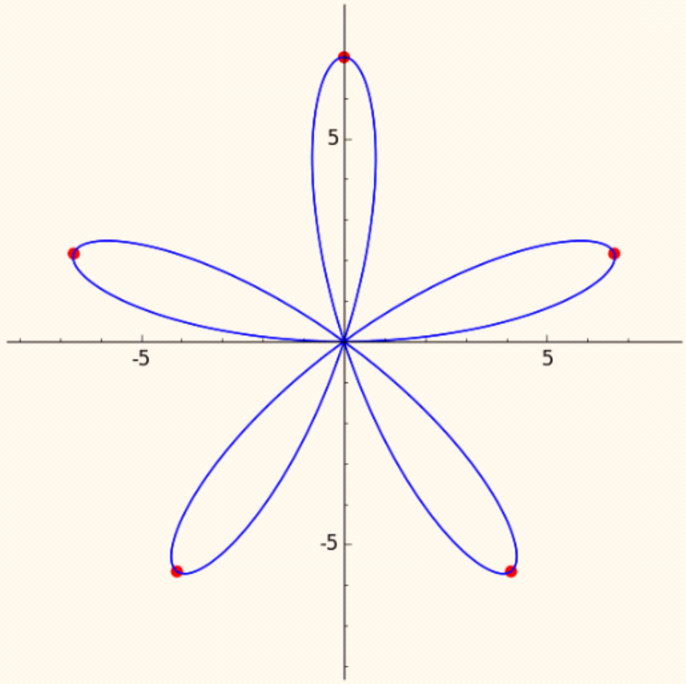
$\theta = \frac{7\pi}{180}$

$\boxed{B)\ \left(4\sqrt{2}, \frac{7\pi}{4}\right)}$

Q21

Saturday, May 2, 2020 8:52 PM

find the highlighted points over the 0 to $\mathbf{360^o}$ range



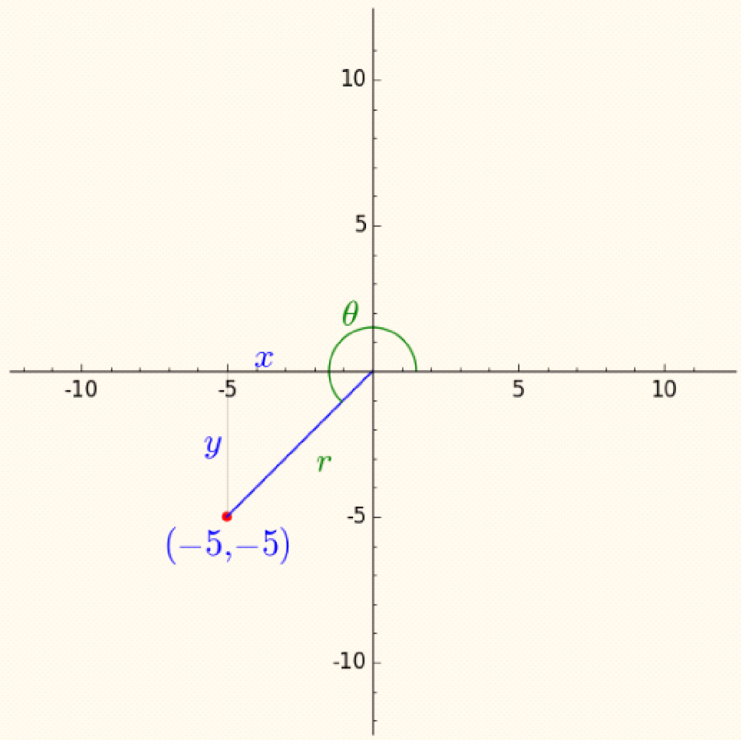
$$r = 7\ \sin(5\,\theta)$$

D) ['126.0', '162.0', '18.00', '198.0', '234.0', '270.0', '306.0', '342.0', '54.00', '90.00']

Q22

Saturday, May 2, 2020 8:52 PM

Convert to Polar



$r = \sqrt{(-5)^2+(-5)^2}$

$= \sqrt{25+25}$

$= \sqrt{50}$

$r = 5\sqrt{2}$ or $r = -5\sqrt{2}$

$\theta = \tan^{-1}\left(\frac{-5}{-5}\right) + 180°$

$= 45° + 180°$ or $= 45 + 360°$

$\theta = 225°$ $\quad\theta = 405°$

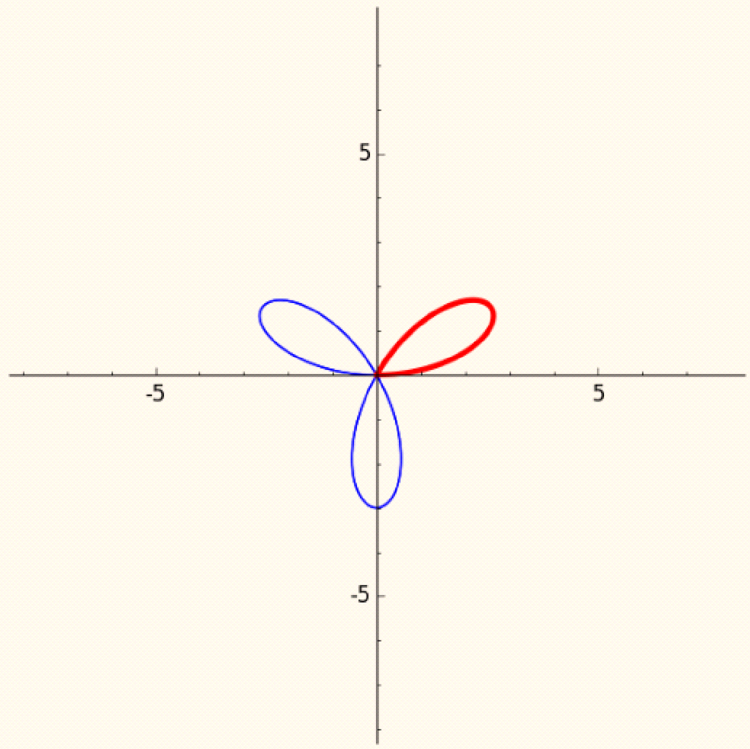
b) $r = -5\sqrt{2}, \theta = 405°$

D) $r = 5\sqrt{2}, \theta = 225°$

Q23

Saturday, May 2, 2020 8:52 PM

(3.14162648068812, 4.188786852511388)



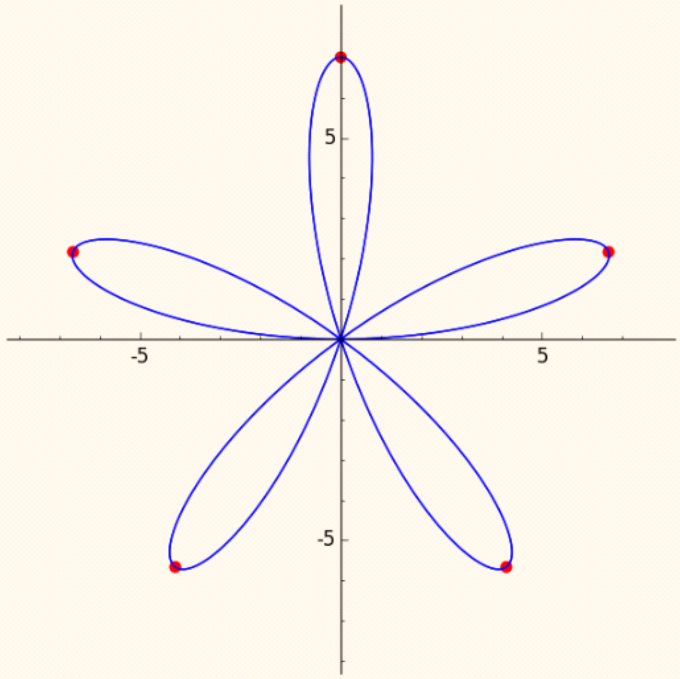
~~A) $r = 6\sin(3\theta)$~~

$\boxed{\text{c) none of these}}$

Q24

Saturday, May 2, 2020 8:52 PM

One way to generally find ALL tips of the pedals [such as ALL the highlighted points below] is to find would be



$r = 3\ \sin(5\,\theta)$

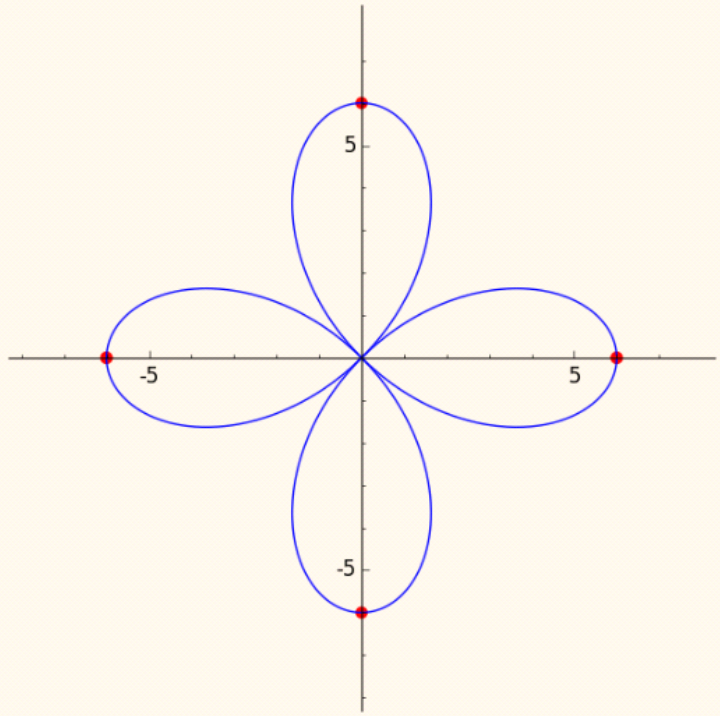
A) find angles where r = 3 or r = −3, its maximum/minimum values

~~C) find angles where r = 0~~

Q25

Saturday, May 2, 2020 8:52 PM

find the highlighted points over the 0 to $\mathbf{360^o}$ range



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

C) ['180.0', '270.0', '360.0', '90.00']