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Math_Questions_0043

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1 of 25

$$\sin^{-1}\theta =$$

arc cos

arc sin

cotangent

This is an undefined operation.

2 of 25

Which of the following is a logarithmic function?

$$f(x) = x^2$$

$$L(t) = 1 - e^{-t}$$

$$g(q) = q^{-2}$$

$$R(x) = 4 \ln(x)$$

3 of 25

How many "petals" does this function have:

$$r = 4 \sin(5\theta)$$

4

10

8

5

4 of 25

What is the period of this function:

$$\cos(4\theta)$$

$$\pi/2$$

$$8\pi$$

$$4\pi$$

$$\pi$$

5 of 25

The concentric rings in a polar coordinate system represent which values?

$$r^2$$

$$|r|$$

$$r\theta$$

$$|r^2|$$

6 of 25

If you are concerned with the angular position on a rotating shaft, the best unit of measure is:

parsecs.

radians.

millimeters.

degrees.

This is really a matter of opinion! It could also be degrees!

7 of 25

If you were going to plot the radial distance, d , of the planets in our solar system from the sun in their natural order, what would be the best function to use to scale the ordinate (vertical axis)?

Square root

Exponential

10^d

Logarithmic

8 of 25

$(\sin \theta)^{-1} =$

$\arcsin \theta$

$\sec \theta$

$\cot \theta$

$\csc \theta$

9 of 25

Which of the following defines the opposite side over the adjacent side for angle θ ?

$\sin \theta$

$\cos \theta$

$\tan \theta$

the slope, m

10 of 25

If $v = -3i - 4j$, then $|v| =$

5

-5

-25

25

11 of 25

$$\sin(\theta + \pi/2) =$$

csc (θ)

tan (θ)

cos (θ)

cos (π)

12 of 25

Which of the following is the value of the amplitude of this function:

$$1/4 \sin^2(3\theta)$$

$1/2$

$1/4$

2

3

13 of 25

$$\ln(e^{-2}) =$$

1

-2

e^{-2}

There is no numerical solution; this expression cannot be resolved.

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Given two vectors, u and v; if $u \cdot v = 0$, then we can say that the vectors are:
perpendicular.

orthogonal.

parallel.

undefined.

The answer can also be perpendicular!

15 of 25

Which of the following moves $e^{-(x+6)}$ three units to the right?

$$e^{-(x+6)} + 3$$

$$e^{-(x+3)}$$

$$e^{-(x+9)}$$

16 of 25

Which of the following is an exponential function?

$$f(x) = x^2$$

$$L(t) = 1 - e^{-t}$$

$$g(q) = q^{-2}$$

$$R(x) = 4 \ln(x)$$

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Which of the following is a trigonometric identity of $1 + \cos(2\theta)$?

$$-\cos(2\theta)$$

$$\sin(2\theta)$$

$$\tan^2(\theta)$$

$$2\cos^2(\theta)$$

18 of 25

$$(\cos \theta)(\tan \theta) =$$

$$\arccos \theta$$

$$\sin \theta$$

$$\cos \theta$$

$$\arcsin \theta$$

19 of 25

Which of the following moves $e^{-(x+6)}$ three units up?

$$e^{-(x+6)} + 3$$

$$e^{-(x+3)}$$

$$e^{-(x+9)}$$

$$e^{-(x+6)} - 3$$

20 of 25

Using trigonometric identities, such as those for angular conversions, simplify the following function, $T(\theta) = \cos^4(\theta) - \sin^4(\theta)$. Hint: Start by thinking of $T(\theta)$ as a difference of squares problem.

$$T(\theta) = \cos(2\theta)$$

$$T(\theta) = \cos(\theta)$$

$$T(\theta) = -\cos^2(\theta)$$

$$T(\theta) \text{ cannot be simplified}$$

21 of 25

All standard exponential functions pass through which value on their vertical axis?

0

1

2

There is no way to predict this.

22 of 25

$\sec^2(\theta) - \tan^2(\theta) =$

1

$\sin^2(\theta)$

$(\csc(\theta))^2$

Undefined; you cannot divide by zero

23 of 25

What is the value of $\|u\|$ if its initial point is located at (4, 2) and its terminus is located at (-1, -10)? Just use the distance formula.

12.6

169

-13

13

24 of 25

If you are concerned with how far along an arc you have traveled, the best unit of measure is:

parsecs.

radians.

millimeters.

degrees.

millimeters is the only one that's a distance. Parsec is a distance, but a very large distance.

25 of 25

Which of the following represents the numerical solution of $\log_2((4^2)(2^3))$?

5

12

7

There is no numerical solution; this expression cannot be resolved.