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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  $\theta$ ?

$\sin \theta$

$\cos \theta$

$\tan \theta$

the slope,  $m$

10 of 25

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

5

-5

-25

25

11 of 25

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

csc ( $\theta$ )

tan ( $\theta$ )

cos ( $\theta$ )

cos ( $\pi$ )

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.

14 of 25

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?

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

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

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

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

17 of 25

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.