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QUESTION 1



Drag and drop the correct answer into the space(s) provided.

Determine the solution to this equation.

$$5^x = 150$$

Round to the nearest hundredth.

The solution is

$x \approx$

3.11



1.33

- 3.11

2.14

QUESTION 2



Drag and drop the correct answer into the space(s) provided.

Determine the solution to this equation.

$$12^x = 200$$

Round to the nearest hundredth.

The solution is

$x \approx$

2.13



0.47

2.14

0.46

QUESTION 3



Drag and drop the correct answer into the space(s) provided.

Solve the equation

$$12^x = 32^{x-8}$$

. Round to the nearest hundredth.

The solution is

$x \approx$

28.27



- 28.27

29.00

- 4.66

QUESTION 4



Drag and drop the correct answer into the space(s) provided.

Solve the equation

$$e^{2x} - 7e^x - 18 = 0$$

. Find the exact answer. Then, use a calculator to round to the nearest hundredth.

$$x = \ln$$



$$x \approx$$



QUESTION 5



Fill in the blank(s) with the correct answer.

Solve the equation

$$e^{4x-2} = 6$$

.

Round to the nearest hundredth.

$$x \approx$$



QUESTION 6



Fill in the blank(s) with the correct answer.

Solve the equation

$$e^{6-2x} = 4$$

.

Round to the nearest hundredth.

$$x \approx$$



QUESTION 7



Fill in the blank(s) with the correct answer.

Determine the solution to this equation.

$$7^x = 20$$

Round to the nearest hundredth.

$$x \approx$$



QUESTION 8



Fill in the blank(s) with the correct answer.

Solve the equation

$$9^x = 30$$

.

Round to the nearest hundredth.

$$x \approx$$



QUESTION 9



Fill in the blank(s) with the correct answer.

Solve this equation.

$$\log(x - 2) = \log(3x - 1) - \log(x + 5)$$

$$x =$$



QUESTION 10



Fill in the blank(s) with the correct answer.

A famous painting sold for AED 1,500,000 in 2005. It sold again for 2,400,000 in 2019. If the value of the painting is increasing at an exponential rate, identify the continuous growth rate.

Round to the nearest tenth.

The continuous growth rate is about



%.



QUESTION 11



Fill in the blank(s) with the correct answer.

Solve the equation

$$e^{2x} + 3e^x - 10 = 0$$

. Find the exact answer. Then, use a calculator to round to the nearest hundredth.

$x = \ln$



$x \approx$



QUESTION 12



Fill in the blank(s) with the correct answer.

Solve the equation

$$9^x = 10^{x-1}$$

.

Round to the nearest hundredth.

$$x \approx$$



QUESTION 13



Choose the correct answer from the drop-down menu.

Solve the equation

$$\log(x-3) = \log(5x+12) - \log(x+8)$$

.

Round to the nearest hundredth if necessary.

$$x =$$



QUESTION 14



Choose the correct answer from the drop-down menu.

What is the solution to this equation?

$$2^x = 21$$

Round to the nearest hundredth.

$$x \approx$$

4.39 ✓ ▼

QUESTION 15



Choose the correct answer from the drop-down menu.

Solve the equation

$$15 - 4 \log 25x = 3$$

.

$$15 - 4 \log 25x = 3$$

$$-4 \log 25x =$$

-12 ✓ ▼

$$\log 25x =$$

3 ✓ ▼

$$10^{\log 25x} = 10^3$$

$$25x =$$

1000 ✓ ▼

$$x =$$

40 ✓ ▼

QUESTION 16



Choose the correct answer from the drop-down menu.

Solve the equation

$$e^{2x} - 4e^x - 21 = 0$$

. Find the exact answer. Then, use a calculator to round to the nearest hundredth.

$x =$

ln 7 ✓ ▼

$x \approx$

1.95 ✓ ▼

QUESTION 17



Select the correct option.

What is the solution to the equation

$$5^x = 72$$

?

Round to the nearest hundredth.



0.38



2.65



2.66



0.37

QUESTION 18



Select the correct option.

What is the solution to this equation?

$$\log(x + 6) = \log(2x + 1) - \log(x - 4)$$

 $x = -5$  $x = 4.80$  $x = 5$  $x = -4.80$

QUESTION 19



Select the correct option.

Gaffar invested AED 425 in an account that grew to a value of AED 1,077 in 15 years. If the growth rate is continuous, what is the continuous compound interest rate?

Round to the nearest tenth of a percent.

☐

6.1%

☒

6.2%

☐

7.7%

☐

0.06%

QUESTION 20



Select the correct option.

What is the solution to this equation?

$$e^{5-3x} = 7$$

Round to the nearest hundredth.



2.31

 -1.02  -0.23 

1.02

