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## QUESTION 1

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

Rewrite

$\log 48$

in terms of

$\log 12$

and

$\log 3$

.

$\log 48 =$

$\log 144 - \log 3$ ✓

$=$

$\log 12^2 - \log 3$ ✓

$=$

$2 \log 12 - \log 3$ ✓

$(\log 12^2)(\log 3)$ $2(\log 12)(\log 3)$ $\log 144 + \log 3$

$\log 12^2 + \log 3$ $2 \log 12 + \log 3$

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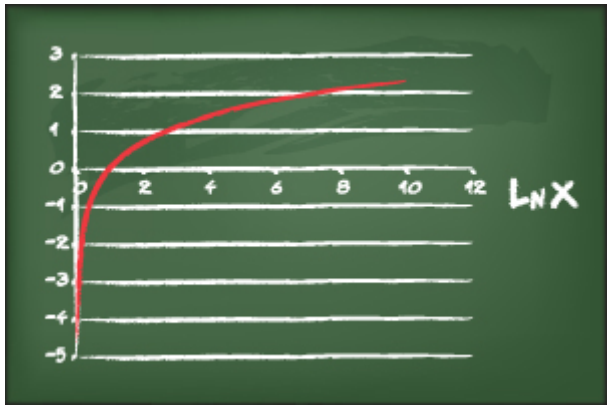
## QUESTION 2

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

Determine the value of

$8\ln e^3 + 2\ln e^6$

.




$8\ln e^3 + 2\ln e^6 =$

36

12 34 24

## QUESTION 3

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

Express

$\log 432$

in terms of

$\log 3$

and

$\log 4$

.

$\log 432 =$

$3 \log 3 + 2 \log 4$ ✓

$6(\log 3)(\log 4)$ $9 \log 3 + 4 \log 4$ $9 \log 3 - 4 \log 4$

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## QUESTION 4

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

Rewrite

$\log_2 324$

in terms of

$\log_2 3$

and

$\log_2 6$

.

$\log_2 324 = \log_2(36)(9)$

=

$\log_2 36 + \log_2 9$ ✓

=

$\log_2 6^2 + \log_2 3^2$ ✓

=

$2 \log_2 6 + 2 \log_2 3$ ✓

$2\log_2 6 - 2\log_2 3$

$4(\log_2 6)(\log_2 3)$

$\log_2 6^2 - \log_2 3^2$

$(\log_2 36)(\log_2 9)$

$\log_2 36 - \log_2 9$

$(\log_2 6^2)(\log_2 3^2)$

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## QUESTION 5

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

Express

$\ln\frac{49}{16}$

in terms of

$\ln 2$

and

$\ln 7$

.

$\ln\frac{49}{16} =$

2 ✓

$\ln 7 -$

4 ✓

$\ln 2$

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## QUESTION 6

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

Rewrite

$$\ln \frac{\sqrt{64}}{\sqrt[4]{36}}$$

in terms of

$\ln 4$

and

$\ln 6$.

$$\ln \frac{\sqrt{64}}{\sqrt[4]{36}} =$$

$\frac{3}{2}$ ✓

$\ln 4 -$

$\frac{1}{2}$ ✓

$\ln 6$

## QUESTION 7

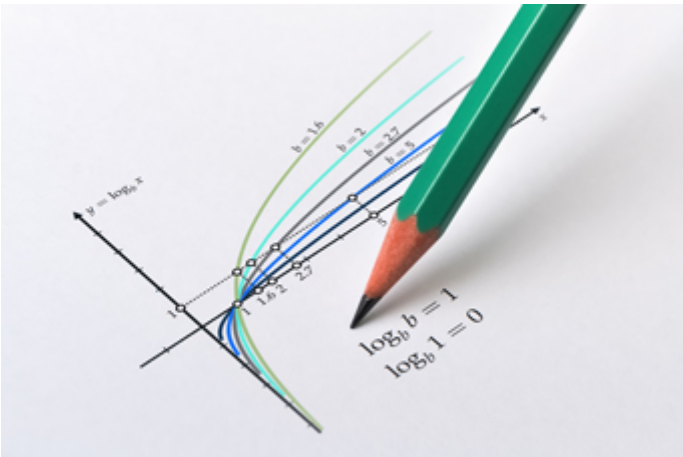
*Fill in the blank(s) with the correct answer.*

Evaluate

$\log_7 \sqrt[4]{343}$ .

$\log_7 \sqrt[4]{343} =$

$\frac{3}{4}$ ✓




## QUESTION 8

*Choose the correct answer from the drop-down menu.*

Use log 3 and log 11 to express log 99.

$\log 99 =$

log 11 + log 9 ✓

=

log 11 + $\log 3^2$ ✓

=

log 11 + 2 log 3 ✓

## QUESTION 9

*Choose the correct answer from the drop-down menu.*

Rewrite

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$\ln 4$

in terms of

$\ln 5$

and

$\ln 10$

.

$\ln 4 =$

$\ln 100 - \ln 25$ ✓

$=$

$\ln 10^2 - \ln 5^2$ ✓

$=$

$2\ln 10 - 2\ln 5$ ✓

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## QUESTION 10

*Choose the correct answer from the drop-down menu.*

What is

$$\log_8 \frac{\sqrt{243}}{\sqrt[3]{25}}$$

in terms of

$\log_8 3$

and

$\log_8 5$.

$$\log_8 \frac{\sqrt{243}}{\sqrt[3]{25}} =$$

$\frac{5}{2}\log_8 3 - \frac{2}{3}\log_8 5$ ✓

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## QUESTION 11

*Choose the correct answer from the drop-down menu.*

Evaluate

$\log 100,000 + \log_8 \sqrt[5]{4096}$ .

$\log 100,000 + \log_8 \sqrt[5]{4096} =$

$5\frac{4}{5}$ ✓

## QUESTION 12

*Choose the correct answer from the drop-down menu.*

Evaluate

$\log_{15} \sqrt[3]{225} - \log_6 216$ .

$\log_{15} \sqrt[3]{225} - \log_6 216 =$

$-2\frac{1}{3}$ ✓ .

## QUESTION 13

*Select the correct option.*

What is the value of

$\log_8 \sqrt[5]{512}$

?

- ○ $\frac{8}{5}$
- ◉ $\frac{3}{5}$ ✓
- ○ $\frac{5}{3}$
- ○ $\frac{5}{8}$

## QUESTION 14

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*Select the correct option.*

Which expression is another form of $\log_7 384$ ?

- (selected) $2\log_7 8 + \log_7 6$ ✓
- $2\log_7 8 + 2\log_7 3$
- $3\log_7 4 + 2\log_7 3$
- $3\log_7 4 - \log_7 6$

## QUESTION 15

*Select the correct option.*

Express ln 45 in terms of ln 3 and ln 5.

- $(2\ln 3)(2\ln 5)$
- $2\ln 3 + 2\ln 5$
- (selected) $2\ln 3 + \ln 5$ ✓

- $(2\ln 3)(\ln 5)$

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