

Exponential and Logarithmic Functions and Relations

15. Properties of Logarithm: Properties of Logarithms

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Lesson | Optional

Review

Use $\log_4 7 \approx 1.404$ to approximate the value of $\log_4 112$.

Enter your answer in the space provided.

$\log_4 112 \approx$ 1. 3.404

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1. 3.404

$\log_4 112 = \log_4 (16 \cdot 7)$

Use $\log_5 7 \approx 1.21$ to approximate the value of $\log_5 175$.

Drag and drop your answers to correctly complete the solution.

$\log_5 175$

$= \log_5$ [1. 7 ✓] $+ \log_5 25$

$\approx 1.21 + \log_5$ [2. 5^2 ✓]

$\approx 1.21 +$ [3. 2 ✓] $\log_5$ [4. 5 ✓]

$\approx$ [5. 3.21 ✓]

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Use $\log_3 10 \approx 2.096$ to approximate the value of $\log_3 1000$.

Enter your answers in the spaces provided.

$\log_3 1000$

$= \log_3$ 1. 10^3 ✓

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$=$ 2. 3 ✓ $\log_3$ 3. 10 ✓

$\approx$ 4. 6.288 ✓

Condense $\log_7 2 + 5 \log_7 a$ into a single logarithm.

Select your answers from the drop-down menus.

$\log_7 2 + 5 \log_7 a$

$= \log_7 2 + \log_7$ [1. a^5 ✓] https://t.me/Grade11_lesson

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$= \log_7$ [2. $2a^5$ ✓]

1. a^5 ✓

2. $2a^5$ ✓

Condense $\log_8 12 + \log_8 z$ into a single logarithm.

Select your answer from the drop-down menu.

$\log_8 12 + \log_8 z =$ 1. $\log_8 12z$

1. $\log_8 12z$

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$\log_8 12 + \log_8 z = \log_8 12z$ Product Property of Logarithms

Condense $\log_3 m + \log_3 n$ into a single logarithm.

- $\log_3 (m+n)$
- $\log_3 \frac{m}{n}$
- $\log_3 mn$ ✓
- $\log_3 m^n$

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$\log_3 m + \log_3 n = \log_3 mn$ Product Property of Logarithms

Use $\log_7 14 \approx 1.356$ to approximate the value of $\log_7 \frac{49}{14}$.

Enter your answer in the space provided.

$\log_7 \frac{49}{14} \approx$ 1. 0.644

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1. 0.644

Write $2\ \log_2 a + 6\ \log_2 b + 3\ \log_2 c$ as a single logarithm.

- $\log_2 36abc$
- $\log_2 \frac{a^2 b^6}{c^3}$
- $\log_2 a^2 b^6 c^3$ ✓
- $\log_2 2ab^6 c^3$

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Use $\log_5 22 \approx 1.921$ to approximate the value of $\log_5 110$.

- (●) 2.921 ✓
- ( ) 0.921
- ( ) −0.921
- ( ) 6.921

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