



Condense logarithmic expressions

- 1** Convert the given logarithm to its equivalent based on the product property

$$\log_5 12$$

- | | |
|---|-----------------------|
| A | $\log_6 5 + \log_6 2$ |
| B | $\log_5 6 + \log_5 2$ |
| C | $\log_6 2 + \log_6 5$ |

- 2** Convert the given logarithm to its equivalent based on the product property

$$\log_6 (5 \cdot 8)$$

- | | |
|---|------------------------|
| A | $\log_8 5 + \log_8 6$ |
| B | $\log_6 12 + \log_6 8$ |
| C | $\log_6 5 + \log_6 8$ |
| D | $\log_5 8 + \log_5 6$ |

- 3** Convert the given logarithm to its equivalent based on the quotient property

$$\log_5 \frac{9}{2}$$

- | | |
|---|-----------------------|
| A | $\log_5 9 - \log_5 2$ |
| B | $\log_4 9 - \log_4 2$ |
| C | $\log_3 9 - \log_3 2$ |
| D | $\log_9 2 - \log_9 5$ |

- 4** Convert the given logarithm to its equivalent based on the quotient property

$$\log_t \frac{x}{y}$$

- | | |
|---|-----------------------|
| A | $\log_t x - \log_t y$ |
| B | $\log_t y - \log_t x$ |

- 5** Convert the given logarithm to its equivalent based on the power property

$$\log_8 81$$

- | | | | |
|---|-------------|---|-------------|
| A | $2\log_8 9$ | B | $2\log_9 8$ |
| C | $8\log_2 9$ | D | $9\log_8 2$ |

- 6** Convert the given logarithm to its equivalent based on the power property

$$\log_3 4^2$$

- | | | | |
|---|-------------|---|-------------|
| A | $4\log_3 2$ | B | $3\log_2 4$ |
| C | $2\log_4 3$ | D | $2\log_3 4$ |

- 7** Convert the given logarithm to its equivalent based on the product property

$$\log_7 8 + \log_7 9$$

- | | | | |
|---|-------------|---|---------------|
| A | $\log_7 73$ | B | $\log_7 72$ |
| C | $\log_7 71$ | D | $\log_{72} 7$ |



Condense logarithmic expressions

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Convert the given logarithm to its equivalent based on the product property

$$\log_y p + \log_y q$$

A $\log_y(p \cdot q)$

B $\log_y \frac{p}{q}$

C $\log_q(y \cdot p)$

9

Convert the given logarithm to its equivalent based on the product property

$$\log_8 2 + \log_8 5$$

A $\log_5(8 \cdot 2)$

B $\log_8(2 \cdot 5)$

C $\log_8 \frac{2}{5}$

10

Convert the given logarithm to its equivalent based on the quotient property

$$\log_{10} 6 - \log_{10} 3$$

A $\log_{10} 3$

B $\log_2 10$

C $\log_{10} 2$

D $\log_{10} 1$

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Convert the given logarithm to its equivalent based on the quotient property

$$\log_7 10 - \log_7 9$$

A $\log_7 \frac{9}{10}$

B $\log_7 \frac{10}{9}$

C $\log_9 \frac{7}{10}$

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Convert the given logarithm to its equivalent based on the power property

$$2 \log_6 12$$

A $\log_6 142$

B $\log_6 144$

C $\log_{144} 6$

D $\log_6 145$