Evaluating Expressions

Example :

Evaluate the expression : $\log_2 8 + \log_3 9$

$\log_2 8 + \log_3 9 = \log_2 2^3 + \log_3 3^2$

$= 3 \log_2 2 + 2 \log_3 3$

$= 3(1) + 2(1)$

$= \mathbf{5}$

$\boxed{\log_a b^c = c \log_a b}$

$\boxed{\log_a a = 1}$

Evaluate each expression.

1) $2 \log_5 25 - \log_4 16$

Answer |

2) $\log_9 \left(\dfrac{1}{3}\right) \cdot \log_7 49$

Answer |

3) $\dfrac{\log_3 27}{2 \log_2 4}$

Answer |

4) $\log_6 36 + 5 \log_9 81$

Answer |

5) $\left(\dfrac{1}{2}\right) \log_2 16 - \log_4 64$

Answer |

6) $\log_5 125 \cdot \log_2 32$

Answer |

7) $\dfrac{2 \log_4 16}{\log_7 49}$

Answer |

8) $\left(\dfrac{1}{3}\right) \log_3 27 + \log_8 64$

Answer |

9) $\log_9 729 - 2 \log_2 128$

Answer |

10) $\log_6 216 \cdot \log_5 125$

Answer |

Answer key

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Example :

Evaluate the expression : $\log_2 8 + \log_3 9$

$\log_2 8 + \log_3 9 = \log_2 2^3 + \log_3 3^2$

$= 3 \log_2 2 + 2 \log_3 3$

$= 3(1) + 2(1)$

$= \mathbf{5}$

$\log_a b^c = c \log_a b$

$\log_a a = 1$

Evaluate each expression.

1) $2 \log_5 25 - \log_4 16$

Answer	**2**

2) $\log_9 \left(\dfrac{1}{3}\right) \cdot \log_7 49$

Answer	**−1**

3) $\dfrac{\log_3 27}{2 \log_2 4}$

Answer	$\dfrac{\mathbf{3}}{\mathbf{4}}$

4) $\log_6 36 + 5 \log_9 81$

Answer	**12**

5) $\left(\dfrac{1}{2}\right) \log_2 16 - \log_4 64$

Answer	**−1**

6) $\log_5 125 \cdot \log_2 32$

Answer	**15**

7) $\dfrac{2 \log_4 16}{\log_7 49}$

Answer	**2**

8) $\left(\dfrac{1}{3}\right) \log_3 27 + \log_8 64$

Answer	**3**

9) $\log_9 729 - 2 \log_2 128$

Answer	**−11**

10) $\log_6 216 \cdot \log_5 125$

Answer	**9**