

# ОСНОВНЫЕ СВОЙСТВА ЛОГАРИФМОВ



*Кравченко Н.А.  
Учитель математики  
ГБОУ СОШ №891  
г. Москва*

**ВПЕРЕД**

# СОДЕРЖАНИЕ

1<sup>0</sup>

*ПРИМЕР*

2<sup>0</sup>

*ПРИМЕР*

3<sup>0</sup>

*ПРИМЕР*

4<sup>0</sup>

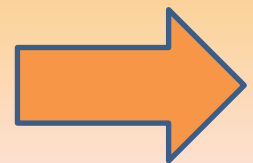
*ПРИМЕР*

5<sup>0</sup>

*ПРИМЕР*

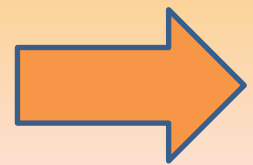
$$a > 0, a \neq 1$$

$$\log_a 1 = 0$$



$$a > 0, a \neq 1$$

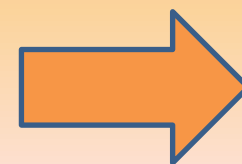
$$\log_a a = 1$$



$$a > 0 \ (a \neq 1)$$

*положительные*

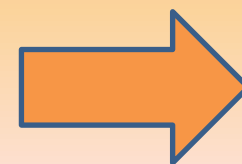
$$\log_a xy = \log_a x + \log_a y$$



$$a > 0 \ (a \neq 1)$$

*положительные*

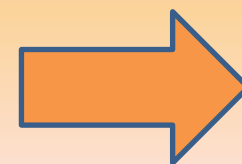
$$\log_a \frac{x}{y} = \log_a x - \log_a y$$



$a > 0$  ( $a \neq 1$ ),  $p \in \mathbb{R}$

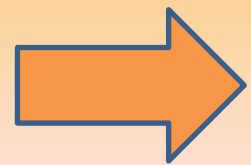
*положительные*

$$\log_a x^p = p \log_a x$$



$$\log_{34} 1 = 0$$

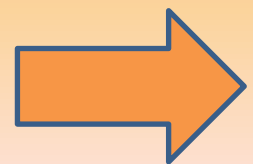
$$34^0 = 1$$



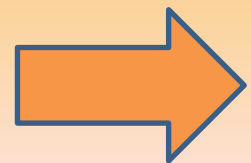


$$\log_{43} 43 = 1$$

$$43^1 = 43$$

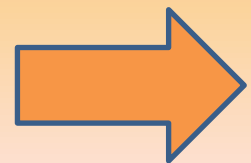


$$\begin{aligned}\log_{12} 4 + \log_{12} 36 &= \\ &= \log_{12} (4 \cdot 36) = \\ &= \log_{12} 144 = 2\end{aligned}$$

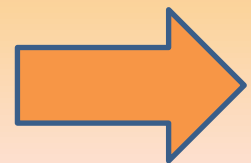


$$\log_2 11 - \log_2 44 = \log_2 \frac{11}{44} =$$

$$= \log_2 \frac{1}{4} = -2$$



$$\log_3 9^2 = 2 \cdot \log_3 9 = \\ = 2 \cdot 2 = 4$$



*По учебнику под редакцией  
А.Н. Колмогорова  
«Алгебра и начала анализа  
10-11»*