

266 Логарифмы

90 11.01.2021

$$\log_3 3 = 1, \text{ т.к. } 3^1 = 3$$

$$\log_3 81 = 4, \text{ т.к. } 3^4 = 81$$

$$\log_3 9 = 2, \text{ т.к. } 3^2 = 9$$

$$\log_3 1 = 0, \text{ т.к. } 3^0 = 1$$

$$\log_3 27 = 3, \text{ т.к. } 3^3 = 27$$

$$\log_3 \frac{1}{3} = -1, \text{ т.к. } 3^{-1} = \frac{1}{3}$$

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$$3) \log_2 2 = x$$

$$2^x = 2$$

$$x = 1$$

$$4) \log_2 1 = x$$

$$2^x = 1$$

$$2^x = 2^0$$

$$x = 0. \text{ Ответ: } x = 0.$$

$$\text{Ответ: } x = 1$$

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$$3) \log_2 \sqrt{2} = \log_2 2^{\frac{1}{2}} = \frac{1}{2} = 0,5$$

$$4) \log_2 \frac{1}{\sqrt{2}} = \log_2 2^{-\frac{1}{2}} = -\frac{1}{2} = -0,5$$

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$$3) \log_3 3 = 1$$

$$4) \log_3 1 = 0.$$

270

$$3) \log_3 \sqrt[4]{3} = \log_3 3^{\frac{1}{4}} = \frac{1}{4} = 0,25$$

$$4) \log_3 \frac{1}{\sqrt[4]{3}} = \log_3 3^{-\frac{1}{4}} = -\frac{1}{4} = -0,25$$

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$$3) \log_{0,5} 0,125 = \log_{0,5} 0,5^3 = -3$$

$$4) \log_{0,5} \frac{1}{2} = \log_{0,5} 0,5 = 1$$

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$$3) \log_4 \frac{1}{16} = \log_4 16^{-1} = \log_4 (4^2)^{-1} = \log_4 4^{-2} = -2$$

$$4) \log_5 \frac{1}{125} = \log_5 5^{-3} = -3.$$

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$$3) \log_{\frac{1}{4}} \frac{1}{64} = \log_{\frac{1}{4}} \left(\frac{1}{4}\right)^3 = 3$$

$$4) \log_{\frac{1}{6}} 36 = \log_{\frac{1}{6}} 6^2 = \log_{\frac{1}{6}} \left(\frac{1}{6}\right)^{-2} = -2$$

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$$3) 10 \log_{10} 2 = 2$$

$$4) \left(\frac{1}{4}\right) \log_{\frac{1}{4}} 6 = 6.$$

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$$3) 0,3^2 \log_{0,3} 6 = (0,3^{\log_{0,3} 6})^2 = 6^2 = 36$$

$$4) 4^{\frac{1}{2} \log_2 9} = (4^{\log_2 9})^{\frac{1}{2}} = 9^{\frac{1}{2}} = \sqrt{9} = 3$$

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$$3) 16 \log_4 7 = 4^2 \log_4 7 = (4 \log_4 7)^2 = 4^2 = 49$$

$$4) 0,125 \log_{0,5} 1 = 0,5^3 \log_{0,5} 1 = (0,5^{\log_{0,5} 1})^3 = 1^3 = 1$$