

**BÀI TẬP GIÁO KHOA**

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**Toán 11**

Bài **19**

**LÔGARIT**

**Bài 1**

$$M = \log_3 5 \cdot \log_5 27$$

$$M = \log_3 5 \cdot \log_5 (3^3)$$

$$M = 3 \cdot (\log_3 5 \cdot \log_5 3)$$

$$M = 3 \cdot 1 = 3$$

**Bài 2**

$$N = \log_2 80 - \log_2 5$$

$$N = \log_2 (80/5)$$

$$N = \log_2 16$$

$$N = \log_2 (2^4) = 4$$

**Bài 3**

$$P = \log_a (a^4 \cdot \sqrt[3]{a})$$

$$P = \log_a (a^4 \cdot a^{1/3})$$

$$P = \log_a (a^{4+1/3}) = \log_a (a^{13/3})$$

$$P = 13/3$$

**Bài 4**

$$Q = 4^{\log_2 3}$$

$$Q = (2^2)^{\log_2 3} = 2^{2 \cdot \log_2 3}$$

$$Q = 2^{\log_2 (3^2)} = 2^{\log_2 9}$$

$$Q = 9$$

**Bài 5**

$$\log_4 125 = \log_{2^2} (5^3)$$

$$\log_4 125 = \frac{3}{2} \cdot \log_2 5$$

$$\log_4 125 = \frac{3}{2} \cdot a$$

$$\log_4 125 = 1.5a$$

**Bài 6**

$$S = \log_{2^{-1}} 2 + \log_3 (3^{-2})$$

$$S = -1 \cdot \log_2 2 + (-2) \cdot \log_3 3$$

$$S = -1 \cdot 1 - 2 \cdot 1$$

$$S = -3$$

**Bài 7**

$$T = \log_2 (2^3 \cdot (2^2)^2 \cdot 2^{1/2})$$

$$T = \log_2 (2^3 \cdot 2^4 \cdot 2^{0.5})$$

$$T = \log_2 (2^{3+4+0.5}) = \log_2 (2^{7.5})$$

$$T = 7.5$$

**Bài 8**

$$U = \log_{10} 3 + \log_{10} (10/3)$$

$$U = \log_{10} \left( 3 \cdot \frac{10}{3} \right)$$

$$U = \log_{10} 10$$

$$U = 1$$

### **Bài 9**

$$\log 25 = \log(100/4)$$

$$\log 25 = \log 100 - \log(2^2)$$

$$\log 25 = 2 - 2 \cdot \log 2$$

$$\log 25 = 2 - 2a$$

### **Bài 10**

$$V = \log_a (a^2 \cdot a^{3/5} : a^{1/2})$$

$$V = \log_a (a^{2+0.6-0.5})$$

$$V = \log_a (a^{2.1})$$

$$V = 2.1$$

