

Β ΛΥΚΕΙΟΥ ΑΛΓΕΒΡΑ

28.18 1)

$$\log_6 2 \cdot \log_{16} 36 = \log_6 2 \cdot \frac{\log_6 36}{\log_6 16} = \log_6 2 \cdot \frac{\log_6 6^2}{\log_6 2^4} = \cancel{\log_6 2} \cdot \frac{2 \log_6 6}{4 \cancel{\log_6 2}} = \frac{2}{4} = \frac{1}{2}$$

28.18 2)

$$\log_{11} 7 \cdot \log_7 11 = \frac{\log_7 7}{\log_7 11} \cdot \log_7 11 = \log_7 7 = 1$$

28.18 3)

$$\log_5 3 \cdot \log_9 25 = \frac{\log_9 3}{\log_9 5} \cdot \log_9 25 = \frac{\log_9 9^{\frac{1}{2}} \cdot \log_9 5^2}{\log_9 5} = \frac{1}{2} \cdot 2 = 1$$

28.18 4)

$$\log_2 25 \cdot \log_5 8 = \frac{\log_5 25}{\log_5 2} \cdot \log_5 2^3 = \frac{2 \log_5 5 \cdot 3 \log_5 2}{\log_5 2} = 2 \cdot 3 = 6$$

28.18 5)

$$\begin{aligned} \log_9 8 \cdot \log_4 27 &= \log_9 2^3 \cdot \log_4 3^3 = 3^2 \log_9 2 \cdot \log_4 3 = \\ &= \frac{9 \cdot \log_4 2}{\log_4 9} \cdot \log_4 3 = \frac{9 \cdot \frac{1}{2} \cancel{\log_4 4} \cdot \frac{1}{2} \log_4 9}{\log_4 9} = \frac{9}{4} \end{aligned}$$

28.18 6)

$$\ln 10 \cdot \log e = \frac{\log 10}{\log e} \cdot \log e = \log 10 = 1$$