Change of base formula: $\log_a n = \dfrac{\log_b n}{\log_b a}$

Express each logarithm in terms of common logarithms. Then approximate its value to four decimal places.

14. $\log_4 25$

$\dfrac{\log 25}{\log 4}$

2.3219

15. $\log_3 56$

$\dfrac{\log 56}{\log 3}$

3.6640

16. $\log_{13} 1987$

$\dfrac{\log 1987}{\log 13}$

2.9608

$\log_2 32 = 5$

$2^n = 32$

$\dfrac{\log 32}{\log 2} =$

$\log_2 31 = \dfrac{\log 31}{\log 2} \approx$

ex

$2^{x+4} = 5^{x-3}$

$\log 2^{x+4} = \log 5^{x-3}$

$(x+4)\log 2 = (x-3)\log 5$

$x\log 2 + 4\log 2 = x\log 5 - 3\log 5$

$-4\log 2 \qquad -4\log 2$

$x\log 2 = x\log 5 - 3\log 5 - 4\log 2$

$-x\log 5 \qquad -x\log 5$

$x\log 2 - x\log 5 = -3\log 5 - 4\log 2$

$\dfrac{x(\log 2 - \log 5)}{\log 2 - \log 5} = \dfrac{(-3\log 5 - 4\log 2)}{(\log 2 - \log 5)} = \dfrac{\log 5^{-3} - \log 2^4}{\log \frac{2}{5}} = \dfrac{\log \frac{5^{-3}}{2^4}}{\log \frac{2}{5}}$

$x =$