

We want more Chapter 3 Problems Worksheet

1) Solve for x:

$$\log_b x = \log_{\sin x} \sin x^{8\sin\frac{\pi}{12}\cos\frac{\pi}{12}} - \log_{\cos x} \cos x^a + \log_b \left(\frac{a^2 b^a}{b^2}\right)$$

2) Solve for y:

$$2 \log_5 \csc x + 2 \log_5 \sin x = \log_{25} y$$

3) Evaluate: $5^{\log_{\sqrt{5}} 3} + 5^{1+\log_5 3}$

4) If $4x^{\frac{2}{3}} - x^{\frac{1}{3}} = 4 - x$ has real solutions q, r , and s , then $\left|\frac{qrs}{8}\right| = ?$

5) Find the sum of the values of the following system: $\begin{cases} 3^{x+y} = 243 \\ 3^{x-y} = 27 \end{cases}$

6) Simplify the following using rational exponents, $\left(\sqrt{\sqrt{\sqrt{a^{12}}}}\right)\left(\sqrt[3]{\sqrt[3]{\sqrt[3]{a^{12}}}}\right)$; where $a > 0$

7) Evaluate: $\ln^4 \sqrt{4} \ln^9 \sqrt{9} \ln^{16} \sqrt{16} \dots \ln^{121} \sqrt{121}$

Answers: 1) $x = a^2$ 2) $y = 1$ 3) 24 4) 8 5) 5 6) $a^{\frac{35}{18}}$ 7) e^{10}