Activity 0207
Tuesday, February 7, 2023

Name:

Problem 1. Find all $x \in \mathbb{R}$ such that

$$\log_3(9x) = 5.$$

Problem 2. Find all $x \in \mathbb{R}$ such that

$$\log_5 32 = x \log_5 \frac{1}{8}.$$

Problem 3. Find all $x \in \mathbb{R}$ such that

$$2\log_7(x-5) = \log_7(x-3).$$

Problem 4. Find all $x \in \mathbb{R}$ such that

$$\log_x(3) + \log_x(x) = \frac{1}{2}.$$

Problem 5. Evaluate.

(a) $\log_3 81$

(b) $\log_{32} 8$

(c) $\log_3 162 - \log_3 2$

(d) $\log_5 \sqrt[3]{625}$

(e) $\log_{10} \frac{32}{5} - \log_{10} \frac{16}{25}$

Problem 6. Solve.

(a) $27^{5x-6} = 81^{2x+11}$

(b) $\log_{13} x = 2$

(c) $\log_2(x+5) + \log_2(x+1) = 3 + \log_2(x-1)$

(d) $1331^{(2x+1)} = \frac{1}{121^{(x-5)}}$

(e) $\log_x(x-2) + \log_x(x-6) = 2$