NAME:

Test 20 (Lessons 39–40): Logarithmic Expressions and Properties of Logs

1) Write $\log_{49} 7 = \frac{1}{2}$ in exponential form.

2) Write $32^{\frac{3}{5}} = 8$ in logarithmic form.

Evaluate. Show your work.

3) $\log_6 216$

4) $\log_8\left(\frac{1}{4}\right)$

5) Expand: $\log \frac{2\sqrt{x}}{5x+1}$

6) Write $\frac{1}{4} \cdot 5\log_a x + \frac{1}{4} \cdot 3\log_a y - 8\log_a z$ as a single logarithm.

Solve.

7) $3\log_8 2x = 2$

8) $\log_8 6 = \log_8 (x+5) + \log_8 x$

9) $\log_4 (x+4) - \log_4 (x-2) = 1$

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