Algebra 2 Name_____ ID: 1

Quiz Review

Date_____ Period____

Rewrite each equation in exponential form.

1) $\log_{14} \frac{1}{196} = -2$ $14^{-2} = \frac{1}{196}$

2) $\log_{15} 225 = 2$

3) $\log_5 625 = 4$

4) $\log_{18} \frac{1}{324} = -2$

Rewrite each equation in logarithmic form.

5) $11^{-2} = \frac{1}{121}$ $\log_{11} \frac{1}{121} = -2$

6) $12^2 = 144$

7) $11^2 = 121$

8) $19^0 = 1$

Expand each logarithm.

9) $\log_7 (w\sqrt{uv})$ $\log_7 (w u^{1/2} v^{1/2}) = \log_7 w + \log_7 u^{1/2} + \log_7 v = \log_7 w + \frac{1}{2}\log_7 u + \frac{1}{2}\log_7 v$

10) $\log_2 (x^2 \cdot y)^6$ $= \log_2 (x^{12} \cdot y^6)$

11) $\log_7 (w^2\sqrt{u})$

12) $\log_7 \frac{x^3}{y^4}$

Condense each expression to a single logarithm.

13) $\log_2 z + \frac{1}{3} \cdot \log_2 x + \frac{1}{3} \cdot \log_2 y$

14) $24\log_4 a - 6\log_4 b = \log_4 a^{24} - \log_4 b^6 = \log_4 \left(\frac{a^{24}}{b^6}\right)$

15) $6\log_7 z + \frac{1}{2} \cdot \log_7 x$

16) $4\log_5 c + \frac{1}{3} \cdot \log_5 a$

Evaluate each expression.

17) $\log_8 4$ $\frac{\log 4}{\log 8} = \frac{2}{3}$

18) $\log_2 \frac{1}{4}$

19) $\ln 38$

20) $\log 32$