Algebra 2: Review for Logs Quiz **Name**_____
Date_____ **Pd**____

Directions: For #1-6, solve the equation. Round to the nearest hundredth, if necessary.

1) $9^{-x} = 27^{2x-3}$

2) $\log_5(2x+1) = 2$

3) $\log_4 x^2 = \log_4(x+2)$

4) $2^x = 67$

5) $3^{-2x+3} = 55$

6) $6 = \left(\frac{1}{2}\right)^{-2x}$

Directions: For #7 – 14, evaluate the expression.

7) $\log_2 32$

8) $7^{\log_7(9x)}$

9) $\log 62$

10) $\log_{11} 11^{x^3}$

11) $\log_4 50$

12) $\log_5 1$

13) $\log_7 0$

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

Directions: For #15 – 17, change to exponential form.

15) $\log_4 16 = 2$

16) $\log_x p = t$

17) $\log_5 125 = 3$

Directions: For #18 – 20, change to logarithmic form.

18) $13^2 = 169$

19) $x^r = t$

20) $9^3 = 729$

Directions: For #21 – 24, expand the expression completely.

21) $\log 3xy$

22) $\log_5 2x^3 y\sqrt{3}$

23) $\log_4 \dfrac{xy^2(r+2)}{4\sqrt[3]{z}}$

24) $\log\left(\dfrac{4x^2 y}{7}\right)^2$

Directions: For #25 – 27, condense the expression completely. Simplify completely after condensing.

25) $\log 3 + \log x - 2\log y + \dfrac{1}{2}\log z$

26) $-3\log_2 4x + \log_2 x - 2\log_2 y + \log_2 y^3$

27) $\log 5 - 3\left(2\log x - \dfrac{4}{3}\log y\right) + 3\log z$