Name Key _____ Date _____ Hour _____

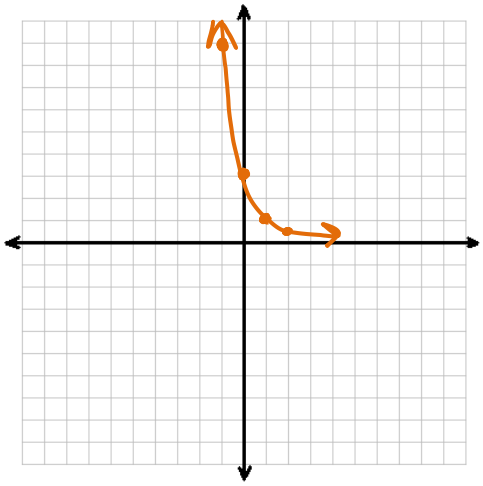
REVIEW 9.1 - 9.2

Algebra 2 Trig G

1. Sketch the graph. State the function's domain and range, and circle whether it is decay or growth.

$$y = 3\left(\frac{1}{3}\right)^x$$

X	Y
-2	27
-1	9
0	3
1	1
2	1/3



Domain: all real #s

Range: $y > 0$

Decay / Growth ?

2 - 5. Determine whether each function represents exponential GROWTH or DECAY.

2. $y = 0.1\left(\frac{2}{3}\right)^x$ decay

3. $y = \frac{1}{4}(80)^x$ growth

4. $y = 4(0.9)^x$ decay

5. $y = 99(.9999)^x$ decay

6 - 7. Using your calculator, find the equation of an exponential function that passes through the given points.

6. $(-3, 32), (-1, 2), (1, 0.125)$

$y = .5 \cdot .25^x$

7. $(-2, 0.32), (-1, 0.8), (0, 2), (1, 5)$

$y = 2 \cdot 2.5^x$

8 - 10. Solve each equation.

8. $3^{x-2} = 27$

$3^{x-2} = 3^3$

$x-2=3$

$x=5$

9. $16^{x-1} = 2^{2x+2}$

$2^{4(x-1)} = 2^{2x+2}$

$4(x-1) = 2x+2$

$4x-4 = 2x+2$

$2x = 6$

$x=3$

10. $125^{x} = 25^{x+3}$

$5^{3x} = 5^{2(x+3)}$

$3x = 2(x+3)$

$3x = 2x+6$

$x=6$

11 - 12. Write each equation in exponential form.

11. $\log_3 81 = 4$

$3^4 = 81$

12. $\log_{100} 10 = \frac{1}{2}$

$100^{1/2} = 10$

13 - 14. Write each equation in logarithmic form.

13. $(64)^{\frac{1}{3}} = 4$

$\log_{64} 4 = \frac{1}{3}$

14. $\left(\frac{1}{6}\right)^{-3} = 216$

$\log_{1/6} 216 = -3$

15 - 18. Solve each equation for x.

15. $\log_5 25 = x$

$5^x = 25$

$x=2$

16. $\log_x 81 = 4$

$x^4 = 81$

$x=3$

17. $\log_7 x = 3$

$7^3 = x$

$343 = x$

18. $\log_3 (2x+8) = \log_3 (x+5)$

$2x+8 = x+5$

$x=-3$