

REVIEW: Unit 5 Quiz exponential and log functions

Tell whether the function shows growth or decay.

1. $f(x) = 32(0.5)^x$

2. $f(x) = 0.5(1.2)^x$

3. $f(x) = (\frac{5}{3})^x$

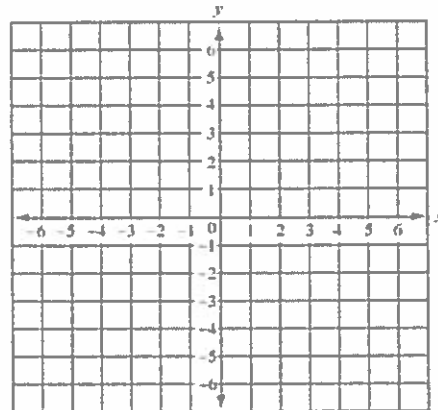
Tell whether the function shows growth or decay.

4. A relation consists of the following points. Find the domain and range of the inverse relation:

	0	3	4	6	9
	1	2	5	7	8

5. Graph the relation and connect the points. Then graph the inverse. Identify the domain and range.

x	y
1	0
3	1
4	2
5	3
6	5



Use inverse operation to write the inverse of each function.

6. $f(x) = \frac{x}{3}$

7. $f(x) = x - \frac{1}{4}$

8. $f(x) = 5x - 1$

9. $f(x) = \frac{x}{2} + 1$

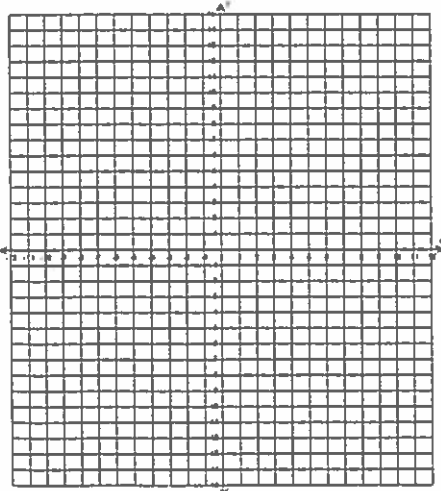
10. $f(x) = 7 - \frac{1}{4}x$

11. $f(x) = \frac{1}{3}(8 - x)$

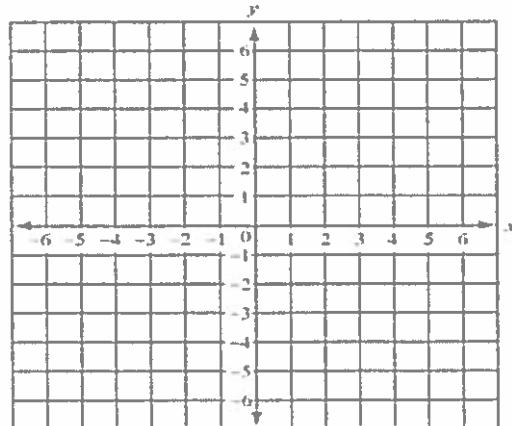
12. $f(x) = 4(x + 10)$

13. $f(x) = \frac{3x - 5}{2}$

14. Graph $f(x) = 3x - 12$. Then write and graph the inverse. Label both functions.



15. Graph $g(x) = -\frac{1}{2}x + 1$. Then write and graph the inverse. Label both functions.



Change each equation from exponential form to logarithmic form.

16. $9^3 = 729$

17. $8^{\frac{1}{3}} = 2$

18. $12^x = 20,736$

19. $7^0 = 1$

Change each equation from logarithmic form to exponential form.

20. $\log_{25} 5 = \frac{1}{2}$

21. $\log_2 4 = 2$

22. $\log_7 x = 3$

23. $\log_{101} 1 = 0$

Calculate using mental math.

24. $\log_7 343$

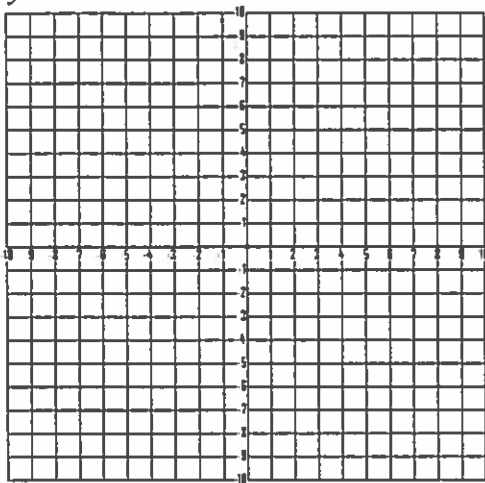
25. $\log_3 \frac{1}{9}$

26. $\log 100,000$

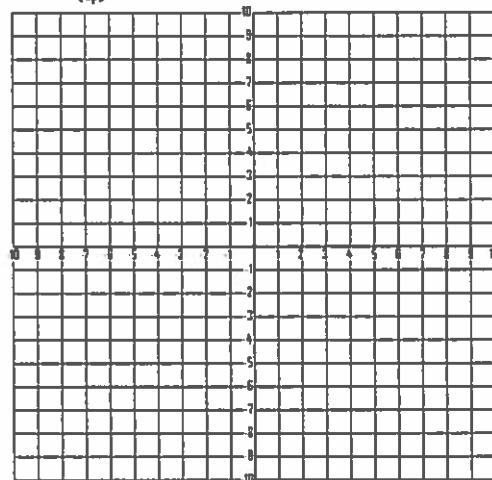
27. $\log_{144} 12$

Graph the exponential function. Then, graph its inverse and write the equation for the inverse function. Label both functions.

28. $y = 2^x$



29. $y = \left(\frac{1}{4}\right)^x$



Write a function to model the situation and evaluate for the given value.

30. Tony purchased a rare guitar in 2000 for \$12,000. Experts estimate that its value will increase by 14% per year. What will its value be in 2012.

31. At the peak of the bean bag animal fad, one sales representative sold 10,000 of the animals in 1 month. Each month after that, he sold about 20% fewer animals. How many animals did he sell 6 months after the peak?

32. Some real estate agents estimate that the value of a house could increase about 4% each year. Write a function to model the growth in value for a house valued at \$100,000.

33. A certain car depreciates about 15% each year. Write a function to model the depreciation in value for a car valued at \$20,000.

34. Justin drove his pickup truck about 22,000 miles in 2004. He read that in 1988 the average residential vehicle traveled about 10,200 miles, which increased by about 2.9% per year through 2004. Write a function for the average mile, $m(t)$, as a function of t , the time in years since 1988. I wonder if Justin drove more or fewer miles than the average residential driver in 2004...