

## CHAPTER

## 7

## Quiz

## Section A

Select the best answer.

- Which of the following functions is an example of exponential growth?  
**A**  $a(x) = 1.5(0.85)^x$     **C**  $c(x) = 0.5(2)^x$   
**B**  $b(x) = 4.07x^{1.3}$     **D**  $d(x) = \log_3 x^4$
- Which expression shows the value of a \$2500 investment after it has grown by 4.5% per year for 12 years?  
**F**  $2500(1.045)^{12}$     **H**  $2500(1.045)^{144}$   
**G**  $2500(1.45)^{12}$     **J**  $2500(1.45)^{144}$
- A balloon with a small leak loses 0.5% of its volume each day. If it originally contained 40 liters of gas, what is the volume of the gas after one week?  
**A**  $40(.05)^7$     **C**  $40 - 40(.005)^7$   
**B**  $40(.95)^7$     **D**  $40(.995)^7$
- If  $g(x)$  is the inverse of  $f(x) = x(\log_2 x)$ , which point is NOT on  $g(x)$ ?  
**F** (0, 1)    **H** (8, 4)  
**G** (2, 2)    **J** (32, 8)
- Which of the following statements is NOT always true?  
**A** If a function contains the origin, then its inverse contains the origin.  
**B** If a function has 3  $x$ -intercepts, then its inverse has 3  $y$ -intercepts.  
**C** If a function contains no points in the fourth quadrant, then its inverse contains no points in the second quadrant.  
**D** If the slope of a linear function is less than 1, then the slope of its inverse is greater than 1.
- Which is the inverse of  $f(x) = (2x + 1)^3 - 4$ ?  
**F**  $a(x) = \sqrt[3]{2x + 1} + 4$   
**G**  $b(x) = \frac{\sqrt[3]{x + 4} - 1}{2}$   
**H**  $c(x) = \frac{\sqrt[3]{x + 4} - 1}{2}$   
**J**  $d(x) = \sqrt[3]{x + 4} - \frac{1}{2}$
- Which is the inverse of  $f(x) = 2\log_3 x$ ?  
**A**  $f^{-1}(x) = 1.5^x$   
**B**  $f^{-1}(x) = 0.5(3)^x$   
**C**  $f^{-1}(x) = 3^{0.5x}$   
**D**  $f^{-1}(x) = 2(3)^x$
- Which is the logarithmic form of  $x^4 = 5$ ?  
**F**  $\log_x 4 = 5$     **H**  $\log x^4 = 5$   
**G**  $\log_4 5 = x$     **J**  $\log_x 5 = 4$
- Evaluate  $\log_8 0.25$ .  
**A** -3    **C**  $-\frac{2}{3}$   
**B**  $-\frac{3}{2}$     **D**  $-\frac{1}{3}$
- Express  $\log_2 9 + 2\log_2 5 - \log_2 3$  as a single logarithm.  
**F**  $\log_2 16$     **H**  $\log_2 31$   
**G**  $\log_2 30$     **J**  $\log_2 75$
- Which is the greatest?  
**A**  $\log_{0.5} 0.25^{30}$     **C**  $\log_3 27^{20}$   
**B**  $\log_2 16^{16}$     **D**  $\log_4 2^{120}$
- Simplify  $\frac{\log_{12} 12^{36}}{\log_4 4^{18}}$ .  
**F** 2    **H** 6  
**G** 3    **J** 18
- Which is equal to  $\log_8 15 + \log_8 25 - \log_8 3$ ?  
**A**  $\frac{\log 5}{\log 2}$     **C**  $\frac{\log 37}{\log 8}$   
**B**  $\log\left(\frac{5}{2}\right)$     **D**  $\log\left(\frac{125}{8}\right)$
- What is the exponential form of  $\log_9 \frac{1}{81} = -2$ ?  
**F**  $2^{-9} = \frac{1}{81}$   
**G**  $9^{-2} = \frac{1}{81}$   
**H**  $9 \cdot -2 = -18$   
**J**  $9^2 = 81$

- 22. F
- 23. D
- 24. H
- 25. A
- 26. J
- 27. D
- 28. F
- 29. C
- 30. G
- 31. C
- 32. G
- 33. B
- 34. F
- 35. D
- 36. J
- 37. B
- 38. H
- 39. A
- 40. J
- 41. A
- 42. G
- 43. C
- 44. F

**CHAPTER 7**

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**Section Quiz: Section A**

- 1. C
- 2. F
- 3. D
- 4. J
- 5. D
- 6. H
- 7. C

- 8. J
- 9. C
- 10. J
- 11. B
- 12. F
- 13. A
- 14. G

**Section Quiz: Section B**

- 1. D
- 2. G
- 3. C
- 4. H
- 5. B
- 6. F
- 7. B
- 8. H
- 9. D

**Chapter Test Form A**

- 1. A
- 2. A
- 3. B
- 4. B
- 5. A
- 6. D
- 7. B
- 8. B
- 9. B
- 10. D
- 11. A
- 12. A
- 13. A
- 14. B