

CHAPTER

7

Quiz

Lessons 7-1 Through 7-4

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 $b(x) = 4.07x^{1.3}$
- 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 $2500(1.45)^{12}$
- 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** $40(.995)^7$
B $40(.95)^7$
- If $g(x)$ is the inverse of $f(x) = x(\log_2 x)$, which point is NOT on $g(x)$?
F (0, 1) **H** (32, 8)
G (8, 4)
- 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 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 $b(x) = \frac{\sqrt[3]{x+4} - 1}{2}$
G $c(x) = \frac{\sqrt[3]{x+4} - 1}{2}$
H $d(x) = \sqrt[3]{x+4} - \frac{1}{2}$
- 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 $f^{-1}(x) = 3^{0.5x}$
- Which is the logarithmic form of $x^4 = 5$?
F $\log_x 4 = 5$ **H** $\log_x 5 = 4$
G $\log_4 5 = x$
- Evaluate $\log_8 0.25$.
A -3 **C** $-\frac{2}{3}$
B $-\frac{3}{2}$
- Express $\log_2 9 + 2\log_2 5 - \log_2 3$ as a single logarithm.
F $\log_2 30$ **H** $\log_2 75$
G $\log_2 31$
- Which is the greatest?
A $\log_{0.5} 0.25^{30}$ **C** $\log_4 2^{120}$
B $\log_2 16^{16}$
- Simplify $\frac{\log_{12} 12^{36}}{\log_4 4^{18}}$.
F 2 **H** 6
G 3
- Which is equal to $\log_8 15 + \log_8 25 - \log_8 3$?
A $\frac{\log 5}{\log 2}$ **C** $\log\left(\frac{125}{8}\right)$
B $\log\left(\frac{5}{2}\right)$
- 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 $9^2 = 81$

CHAPTER 7

Section Quiz Lessons 7-1 Through 7-4

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|------|-------|
| 1. C | 8. H |
| 2. F | 9. C |
| 3. C | 10. H |
| 4. H | 11. B |
| 5. C | 12. F |
| 6. G | 13. A |
| 7. C | 14. G |