

## CHAPTER

## 7

## Chapter Test

## Form A

Select the best answer.

- Which function is an example of exponential growth?  
**A**  $a(x) = 0.5(1.2)^x$   
**B**  $b(x) = 2.4(0.86)^x$
- Ted's comic book collection, which was worth \$1300 five years ago, has been increasing in value by 12% per year since then. Which expression gives the current value of the collection?  
**A**  $1300(1.12)^5$     **C**  $1300(1.12)(5)$   
**B**  $1300(.12)^5$
- The student population of Valley High School has been steadily decreasing by 2% per year. If its population 8 years ago was 1200, which is the best expression for its population now?  
**A**  $1200 - 1200(.02)^8$   
**B**  $1200(.98)^8$
- If  $g(x)$  is the inverse of  $f(x) = \sqrt{x^3 + 1}$ , which of the following is on  $g(x)$ ?  
**A** (2, 3)  
**B** (3, 2)
- Which statement is NOT always true?  
**A** The inverse of a linear function is a function.  
**B** The inverse of a quadratic function is not a function.  
**C** If a function has two  $x$ -intercepts, then its inverse has two  $y$ -intercepts.
- Which is the inverse of  $f(x) = \sqrt{2x + 5}$ ?  
**A**  $a(x) = x^2 - \frac{5}{2}$     **C**  $d(x) = \frac{x^2 - 5}{2}$   
**B**  $c(x) = \frac{x^2}{2} - 5$
- Which is the inverse of  $f(x) = 6^x$ ?  
**A**  $f^{-1}(x) = \log_x 6$     **C**  $f^{-1}(x) = \frac{\log x}{6}$   
**B**  $f^{-1}(x) = \log_6 x$
- Which is the logarithmic form of  $2^{10} = 1024$ ?  
**A**  $\log_2 10 = 1024$   
**B**  $\log_2 1024 = 10$
- Evaluate  $\log_8 32$ .  
**A**  $\frac{3}{5}$   
**B**  $\frac{5}{3}$
- Express  $2\log 4 + 3\log 2$  as a single logarithm.  
**A**  $6\log 8$     **C**  $\log 128$   
**B**  $5\log 6$
- Which is the greatest?  
**A**  $\log_2 32^8$   
**B**  $\log_3 27^{13}$   
**C**  $\log_4 2^{50}$
- Simplify  $\log 10^9 + 10^{\log 9}$ .  
**A** 18  
**B** 81
- Which is equal to  $\log_5 100$ ?  
**A**  $\frac{2}{\log 5}$   
**B**  $\frac{100}{\log 5}$
- Solve  $4^{4x-5} = 8^{3x-4}$ .  
**A**  $x = \frac{3}{2}$   
**B**  $x = 2$
- Solve  $3^{2x} = 30$ .  
**A**  $\frac{\log_3 30}{2}$     **C**  $2\log_3 30$   
**B**  $\log_3 15$

**CHAPTER 7** **Chapter Test**  
**Form A** continued

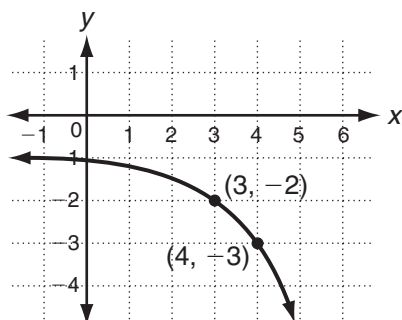
16. What is the solution set to the equation  $\log_2(3x + 1) + \log_2(x + 7) = 5$ ?

- A {1}
- B  $\{-\frac{25}{3}, 1\}$

17. Which is equal to  $e^{\ln 3} + \ln e^4$ ?

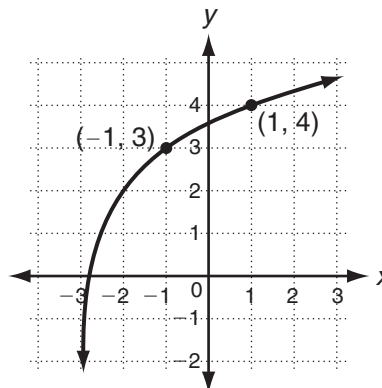
- A 7
- B 12

18. What could be the function shown in the graph?



- A  $f(x) = -2^{x-3} + 1$
- B  $g(x) = -2^{x-3} - 1$
- C  $h(x) = 2^{3-x} + 1$

19. What could be the function shown in the graph?



- A  $a(x) = \log_2(x - 3) + 2$
- B  $a(x) = \log_2(x + 3) + 2$
- C  $d(x) = 2\log_2(x + 2) + 3$

20. If the data below is from an exponential function, what is the value of  $a$ ?

<b>x</b>	3	5	7
<b>y</b>	8	$a$	18

- A 12
- B 12.5
- C 13

21. Evaluate  $f(1)$  for  $f(x) = \ln x$ .

- A 0
- B 1

22. The data below is from an exponential function. What is the value of the constant ratio?

<b>x</b>	-1	0	1	2	3
<b>y</b>	2	4	8	16	32

- A 1
- B 2
- C 4

# **Answer Key** Algebra 2

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## **CHAPTER 7**

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### **Chapter Test Form A: Multiple Choice**

- |       |       |
|-------|-------|
| 1. A  | 12. A |
| 2. A  | 13. A |
| 3. B  | 14. B |
| 4. B  | 15. A |
| 5. A  | 16. A |
| 6. C  | 17. A |
| 7. B  | 18. B |
| 8. B  | 19. B |
| 9. B  | 20. A |
| 10. C | 21. A |
| 11. A | 22. B |