NAME _____ DATE _____ PERIOD _____

7

Chapter 7 Test, Form 2B

SCORE _____

Assessment

Write the letter for the correct answer in the blank at the right of each question.

1. Simplify $(m^4)^2$.

A $6m$ **B** m^8 **C** m^6 **D** $2m^4$ **1.** _____

2. Simplify $(-2xy^2)^4(2x^3y^4)^2$.

F $4x^{24}y^{32}$ **G** $-8x^9y^6$ **H** $64x^{10}y^{16}$ **J** $-4x^{10}y^{16}$ **2.** _____

3. Simplify $\frac{6n^{-3}y}{2n^{-1}y^{-3}}$. Assume the denominator is not equal to zero.

A $\frac{4y^3}{n^2}$ **B** $\frac{3y^4}{n^2}$ **C** $\frac{3}{n^4y^2}$ **D** $\frac{3n^2}{y^4}$ **3.** _____

4. Simplify $\frac{(a^{-2}b^4)^{-6}}{(a^4b^{-8})^3}$. Assume the denominator is not equal to zero.

F ab^3 **G** 1 **H** $\frac{a^{24}}{b^{48}}$ **J** $\frac{b^{48}}{a^{24}}$ **4.** _____

5. Which monomial represents the number of square units in the area of a circle with radius $3x^3$ units?

A $9\pi x^6$ **B** $6\pi x^6$ **C.** $9\pi x^9$ **D** $6\pi x^5$ **5.** _____

6. Express 8,450,000 in scientific notation.

F 8.45×10^4 **G** 8.45×10^7 **H** 8.45×10^5 **J** 8.45×10^6 **6.** _____

7. Evaluate $\frac{4.65 \times 10^{-4}}{5 \times 10^{-6}}$.

A 9.3×10^{11} **B** 9.3×10^1 **C** 9.3×10^2 **D** 9.3×10^0 **7.** _____

8. SOLAR SYSTEM The average distance Earth is from the Sun is about 9.296×10^7 miles, and the average distance Mars is from the Sun is about 1.4162×10^8. About how many times as far is Mars from the Sun as Earth is from the Sun?

F 0.7 **G** 0.9 **H** 1.3 **J** 1.5 **8.** _____

9. Write $(8x)^{\frac{1}{2}}$ in radical form.

A $8\sqrt{x}$ **B** $\sqrt{8x}$ **C** $8\sqrt{8x}$ **D** $x\sqrt{8}$ **9.** _____

10. Evaluate $125^{\frac{2}{3}}$.

F 5 **G** 25 **H** 625 **J** 3125 **10.** _____

11. Solve $6^{x+1} = 1296$.

A 1 **B** 2 **C** 3 **D** 4 **11.** _____

NAME _____ DATE _____ PERIOD _____

7 Chapter 7 Test, Form 2B *(continued)*

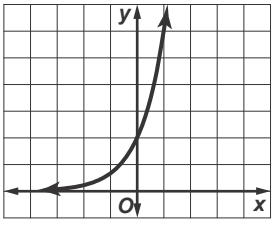
12. Which is the equation for the nth term of the geometric sequence 6, 12, 24, ...?

F $a_n = 6 \cdot 2^n$ **G** $a_n = 2 \cdot 3^n$ **H** $a_n = 3 \cdot 2^n$ **J** $a_n = 3 \cdot 2^{n-1}$ **12.** _____

13. Which equation represents exponential decay?

A $y = 0.5x^3$ **B** $y = 0.5x^2 - x$ **C** $y = 0.5(1.07)^x$ **D** $y = 0.5(.87)^x$ **13.** _____

14. Which equation corresponds to the graph shown?



F $y = 3^x + 2$ **H** $y = 2(3^x)$

G $y = 2(3^x + 1)$ **J** $y = (2 \cdot 3)^x + 1$ **14.** _____

15. A weight lifter can deadlift 275 pounds. She can increase the weight $W(x)$ that she can lift according to the function $W(x) = 275(1.05)^x$, where x represents the number of training cycles completed. How much will she deadlift after 5 training cycles?

A 334 lb **B** 369 lb **C** 344 lb **D** 351 lb **15.** _____

16. POPULATION A city's population is about 763,000 and is increasing at an annual rate of 1.5%. Predict the population of the city in 50 years.

F 1,335,250 **G** 826,830,628 **H** 358,374 **J** 1,606,300 **16.** _____

17. BUSINESS A printing press valued at $120,000 depreciates 12% per year. What will be the approximate value of the printing press in 7 years?

A $19,200 **B** $265,282 **C** $49,041 **D** $55,728 **17.** _____

18. Find the third term of the sequence in which $a_1 = -1$ and $a_n = 5a_{n-1} - 3$, if $n \geq 2$.

F –218 **G** –43 **H** –8 **J** 12 **18.** _____

19. Find an explicit formula for $a_1 = 10$, $a_n = a_{n-1} - 3$, $n \geq 2$.

A $a_n = n - 3$ **C** $a_n = -3n + 10$

B $a_n = 10n - 3$ **D** $a_n = -3n + 13$ **19.** _____

20. Find a recursive formula for the arithmetic sequence 8, –2, –12, –22, ...

F $a_1 = 8$, $a_n = -10a_{n-1}$, $n \geq 2$ **H** $a_1 = 8$, $a_n = -\frac{1}{2}a_{n-1} + 2$, $n \geq 2$

G $a_1 = 8$, $a_n = a_{n-1} - 10$, $n \geq 2$ **J** $a_1 = 8$, $a_n = \frac{1}{2}a_{n-1} - 6$, $n \geq 2$ **20.** _____

Bonus Simplify $3^{2n-1} \cdot (3^{5n})$. **B:** _____