Chapter 7 Practice Test

SCORE ____

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

1. Simplify
$$(-2w^5y^4)^3(2wy^2)^2$$

 $(-8w^{15}y^{12})(4w^2y^4)$

2. Simplify
$$(b^4)^3$$
.

3. Simplify
$$\frac{16r^3t^{-5}}{4r^{-1}t^2}$$
. Assume the denominator is not equal to zero.

3.
$$\frac{4r}{t7}$$

4. What represents the number of square units in the area of a circle with radius
$$2x^4$$
 units? (Area of a circle = πr^2)

5. Simplify $\frac{(-8x^2y^2)^{-2}}{2}$ Assume the denominator is not equal to zero

5. Simplify
$$\frac{(-8x^2y^2)^{-2}}{(4x^3y)^3}$$
. Assume the denominator is not equal to zero.

$$(-8)^{-4} \times (-4)^{-4} \times (-4)^{-4}$$

7. Evaluate
$$\frac{(7 \times 10^8)}{(2.4 \times 10^{-4})}$$
. $-\frac{7}{24} = 2.9$ Ato $\frac{10^8}{10^{-4}} = 10^{8-(-4)}$

8. Evaluate
$$16^{\frac{3}{4}}$$
. $(9/6)^{\frac{3}{4}} = 2^{\frac{3}{4}}$

9. Solve
$$3^{x+2} = 81$$
. $\times + 2 = 4$

10. ATTENDANCE The total home attendance for a professional basketball team in 2010 was about 8.2×10^5 , and in 2008 was about 7.175×10^5 . About how many times as large was the attendance in 2010 as the attendance in 2008? 7.175×105 = 1.14

11. Write
$$4(y)^{\frac{1}{2}}$$
 in radical form

Chapter 7 Practice Test (continued)

12. TOURNAMENTS A chess tournament starts with 16 people competing. The exponential function $y = 16\left(\frac{1}{2}\right)^x$ describes how many people are remaining in the tournament after x rounds. How many people are left in the tournament after 2 rounds?

F 4

G 2

H8

J 1

1 after 2 $16(\frac{1}{2})^2 = 16(\frac{1}{4}) = \frac{1}{1000(1.02)^8}$ 13. 0R B

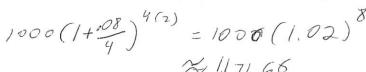
INVESTMENTS Determine the amount of an investment if \$1000 is invested at an interest rate of 8% compounded quarterly for 2 years.

A \$1160.00

B \$1171.66

C \$1040.40

D \$1166.40



60,000 (89)

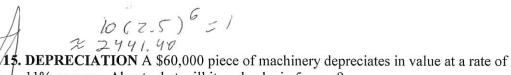
14. BIOLOGY If $y = 10(2.5)^t$ represents the number of bacteria in a culture at time t, how many will there be at time t = 6?

F 2441

G 244

H 24

J none



11% per year. About what will its value be in 5 years?

A \$47,526

B \$42,298

C \$33,504



16. Which is the equation for the *n*th term of the geometric sequence -2, 8, -32, ...?

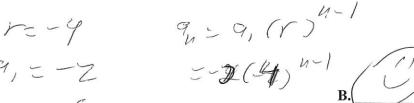
$$\mathbf{F} a_n = -2 \cdot 4^n$$

$$\mathbf{H} a_n = -2 \cdot 4^{n-1}$$

$$\mathbf{G} \ a_n = 4 \cdot (-2)^n$$

H
$$a_n = -2 \cdot 4^{n-1}$$

J $a_n = -2 \cdot (-4)^{n-1}$





Bonus Simplify $(3^{n+1})(3^{2n})^4$.

1 | -4(-z) = -2 2 | -4(-z) = -8 5 | -4(-z) = -16