

### Chapter 7 Review, Part 1

(Lessons 7-1 and 7-2)

Simplify.

1.  $(r^3)(2r^5)$

2.  $(x^5)^4$

3.  $(-4c^2n^3)(3m^4)$

4.  $(-5x^4y^2)^2$

5.  $(2cd)^2(-4c^3)^2$   
 $(4c^2d^2)(16c^6)$

6.  $(5y^2w^4)^2 + 2(yw^2)^4$   
 $25y^4w^8 + 2y^4w^8$

Simplify. Assume that no denominator is equal to zero.

7.  $\frac{c^{11}}{a^9}$

8.  $\frac{y^7}{y^2} = y^5$

9.  $\frac{r^{4n-2}}{r^{4n}} = r^{4n-2-4n} = r^{-2} = \frac{1}{r^2}$

10. MULTIPLE CHOICE Write the ratio of the area of a circle with radius  $r$  to the circumference of the same circle.

A.  $\frac{2}{r}$

B. 2

C.  $\frac{r}{2}$

D.  $\frac{1}{2r}$

$\frac{\pi r^2}{2\pi r} = \frac{r}{2}$

(Lessons 7-3 and 7-4)

Simplify.

11.  $\sqrt[3]{81} = 3$

12.  $4^{\frac{3}{2}} = (\sqrt{4})^3 = 2^3$

Solve each equation.

13.  $5^x = 125$   
 $5^x = 5^3$

14.  $2^{5x-4} = 64$   
 $2^{5x-4} = 2^6$   
 $5x-4 = 6$   
 $5x = 10$   
 $x = 2$

15. Write  $2\sqrt{7xy}$  in exponential form.

Express each number in scientific notation.

16. 15,000,000

17. 0.0000308

18. MULTIPLE CHOICE Evaluate  $(4 \times 10^2)(3.6 \times 10^{-4})$ .

A.  $1.11 \times 10^3$

C.  $1.44 \times 10^2$

B.  $1.44 \times 10^4$

D.  $1.44 \times 10^{-27}$

Evaluate each quotient. Express the results in both scientific notation and standard form.

19.  $\frac{7.2 \times 10^4}{8 \times 10^{-2}} = \frac{7.2}{8} \times \frac{10^4}{10^{-2}} = 0.9 \times 10^7 = 9 \times 10^6$

20.  $\frac{-3.6 \times 10^{-3}}{6 \times 10^1} = \frac{-3.6}{6} \times \frac{10^{-3}}{10^1} = -0.6 \times 10^{-4} = -6 \times 10^{-8}$