**7-8A Lesson Master**

**SKILLS** Objective A

In 1–4, evaluate in your head.

1. a. \( \frac{4}{2} = \) ________  
   b. \( 4^2 = \) ________  
   c. \( 4^{-2} = \) ________

2. \( 27^{-\frac{1}{3}} = \) ________  
3. \( \left( \frac{1}{8} \right)^{\frac{5}{3}} = \) ________  
4. \( \left( \frac{36}{25} \right)^{\frac{3}{2}} = \) ________

**SKILLS** Objective B

In 5–7, simplify the expression and write without negative exponents. Assume all variables represent positive numbers.

5. \( (8x^{18})^{-\frac{1}{3}} = \) ________  
6. \( \left( \frac{a^8}{4b^3} \right)^{-\frac{3}{2}} = \) ________  
7. \( \left( \frac{1}{81x^3} \right)^{-\frac{3}{4}} = \) ________

8. Solve for \( n \):
   \( a^{\frac{5}{2}} \cdot a^{-\frac{3}{4}} = a^n \) ________

**SKILLS** Objective D

In 9 and 10, solve the equation by hand.

9. \( x^{\frac{5}{3}} = 32 \) ________
10. \( \frac{b^{-\frac{3}{4}}}{4} + 7 = 13.25 \) ________

**PROPERTIES** Objective E

11. Fill in the Blank If \( x^\frac{9}{7} = 18 \), then \( x^\frac{9}{7} = \) ________.

12. Place in order from least to greatest if \( x > 1 \): \( x^\frac{9}{7}, x^{\frac{3}{4}}, x^{\frac{1}{3}}, x^{-\frac{1}{3}} \) ________

13. Multiple Choice To evaluate \( a^{-\frac{m}{n}} \), which could be your first step?
   A. Take the \( m \)th power of \( a \).  
   B. Take the \( n \)th root of \( a \).  
   C. Take the reciprocal of \( a \).  
   D. Any of the above

**USES** Objective F

14. You just discovered that \( 5\frac{1}{2} \) years ago, your grandparents put \$2000 in a college fund for you. The fund has since grown to \$2813.25.
   a. What APY has it earned, to the nearest tenth of a percent? ________
   b. What will be the value of the account in another \( 1\frac{3}{2} \) years? ________

Questions on SPUR Objectives