Name: **Date:**

Practice: Working with Rational Exponents B

Rewrite each exponential expression as a radical expression. Do not evaluate.

1. $(-14)^{\frac{4}{2}}$

2. $8^{\frac{w}{12}}$

Rewrite each radical expression as an exponential expression. Do not evaluate.

3. $\sqrt[7]{9}$

4. $\sqrt[4]{j^k}$

5. $\sqrt[8]{(-12)^6}$

Evaluate each expression.

6. $\sqrt[4]{(-3)^2}$

7. $-81^{\frac{5}{4}}$

continued

Name: **Date:**

Use the information given in each scenario to solve the problems.

8. A clothing store manager hires an advertising agency to help find new customers. The advertising agency is using social media to contact potential customers. The agency uses the equation $y = 4 \cdot 5^w$ to estimate the number of people who will have been contacted through social media after w weeks. Approximately how many people will have been contacted after $8\frac{1}{7}$ weeks?

9. The balance in a bank account with an annual interest rate of 2%, compounded annually, can be represented using the function $f(t) = 1000(1.02)^t$, where t is the time in years after opening the account. What was the approximate account balance 6 years and 3 months, or $6\frac{1}{4}$ years, after the account was opened?

10. A newspaper is losing subscribers. In 2010, the newspaper had 30,000 subscribers. The newspaper publisher estimates that t years after 2010, the newspaper will have approximately $30{,}000(0.92)^t$ subscribers. Approximately how many subscribers will the newspaper have $3\frac{5}{12}$ years after 2010?