

48. **CHALLENGE** You are saving money for retirement. You plan to withdraw \$30,000 at the beginning of each year for 20 years after you retire. Based on the type of investment you are making, you can expect to earn an annual return of 8% on your savings after you retire.
- Let a_n be your balance n years after retiring. Write a recursive equation that shows how a_n is related to a_{n-1} .
 - Solve the equation from part (a) for a_{n-1} . Find a_0 , the minimum amount of money you should have in your account when you retire. (*Hint:* Let $a_{20} = 0$.)



MIXED REVIEW FOR TAKS

TAKS PRACTICE at classzone.com

REVIEW

Lesson 1.3;
TAKS Workbook

49. **TAKS PRACTICE** What is the solution of $\frac{1}{3}(8x - 5) = 4x + 7$? **TAKS Obj. 2**

- (A) $-\frac{13}{2}$ (B) 4 (C) 9 (D) 29

REVIEW

TAKS Preparation
p. 324;
TAKS Workbook

50. **TAKS PRACTICE** To the nearest tenth of a square foot, what is the area of a rectangular garden with a 25-foot-long side and a 50-foot diagonal? **TAKS Obj. 8**

- (F) 892.5 ft² (G) 1082.5 ft² (H) 1107.5 ft² (J) 2165.0 ft²

QUIZ for Lessons 12.4–12.5

Find the sum of the infinite geometric series, if it exists. (p. 820)

1. $\sum_{n=1}^{\infty} 2\left(\frac{3}{7}\right)^{n-1}$ 2. $\sum_{n=0}^{\infty} 4\left(-\frac{5}{6}\right)^n$ 3. $\frac{3}{4} + \frac{15}{8} + \frac{75}{16} + \frac{375}{32} + \dots$

Write the repeating decimal as a fraction in lowest terms. (p. 820)

4. 0.777... 5. 0.393939... 6. 123.123123...

Write the first five terms of the sequence. (p. 827)

7. $a_1 = 2$
 $a_n = a_{n-1} + 4$ 8. $a_0 = 3$
 $a_n = (a_{n-1})^2 - 5$ 9. $a_1 = 1, a_2 = 4$
 $a_n = a_{n-1} - a_{n-2}$

Write a recursive rule for the sequence. The sequence may be arithmetic, geometric, or neither. (p. 827)

10. $5, \frac{17}{4}, \frac{7}{2}, \frac{11}{4}, 2, \dots$ 11. 2, 6, 12, 72, 864, ... 12. 8, 24, 72, 216, 648, ...

Find the first three iterates of the function for the given initial value. (p. 827)

13. $f(x) = -3x - 2, x_0 = 1$ 14. $g(x) = 4x + 1, x_0 = 2$ 15. $f(x) = -2x + 3, x_0 = -2$
16. $f(x) = 5x - 7, x_0 = -3$ 17. $h(x) = x^2 - 6, x_0 = -1$ 18. $f(x) = 3x^2 + 2, x_0 = 0$

19. **PENDULUMS** A pendulum that is released to swing freely travels 25 inches on the first swing. On each successive swing, the pendulum travels 85% as far as the previous swing. What is the total distance the pendulum swings? (p. 820)

