

43. **CAR LOANS** If you borrow  $P$  dollars to buy a car and agree to repay the loan over  $t$  years at an annual interest rate of  $i$  (expressed as a decimal), then your monthly payment  $M$  is given by either formula below.

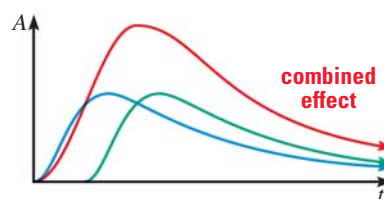
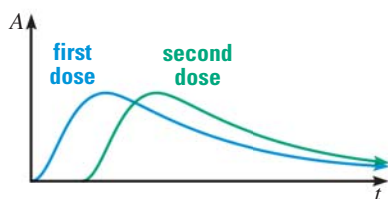
**Formula 1:**  $M = \frac{Pi}{1 - \left(\frac{1}{1+i}\right)^{12t}}$

**Formula 2:**  $M = \frac{Pi(1+i)^{12t}}{(1+i)^{12t} - 1}$

- Show that the formulas are equivalent by simplifying the first formula.
  - Find your monthly payment if you borrow \$15,500 at an annual interest rate of 6% and repay the loan over 4 years.
44. **TAKS REASONING** The amount  $A$  (in milligrams) of aspirin in a person's bloodstream can be modeled by

$$A = \frac{391t^2 + 0.112}{0.218t^4 + 0.991t^2 + 1}$$

where  $t$  is the time (in hours) after one dose is taken.



- Graph the equation using a graphing calculator.
  - A second dose of the drug is taken 1 hour after the first dose. Write an equation to model the amount of the second dose in the bloodstream.
  - Write and graph a model for the *total* amount of aspirin in the bloodstream after the second dose is taken.
  - About how long after the second dose has been taken is the greatest amount of aspirin in the bloodstream?
45. **CHALLENGE** Find the next two expressions in the pattern shown. Then simplify all five expressions. What value do the expressions approach?
- $$1 + \frac{1}{2 + \frac{1}{2}}, 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}, 1 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2}}}}, \dots$$

**TAKS PRACTICE** at classzone.com

## MIXED REVIEW FOR TAKS

**REVIEW**  
TAKS Preparation  
p. 66;  
TAKS Workbook

46. **TAKS PRACTICE** One leg of a right triangle is 4 centimeters longer than the other leg. The hypotenuse is 20 centimeters. About how long is the shorter leg? **TAKS Obj. 10**
- (A) 10.4 cm      (B) 12.0 cm      (C) 12.6 cm      (D) 16.0 cm

**REVIEW**  
Lesson 3.2;  
TAKS Workbook

47. **TAKS PRACTICE** Which of the following is the solution of this system of linear equations? **TAKS Obj. 4**

$$\begin{aligned} 3x - 4y &= -18 \\ 5x + 2y &= -4 \end{aligned}$$

- (F) (-2, -3)      (G) (-2, 3)      (H) (2, -3)      (J) (3, -2)