

Indicators

Objective:

5.04 Develop fluency in the use of formulas to solve problems.

Vocabulary and Resources		
substitution variable	evaluate transform	investment interest

A. The Party Shoppe is advertising a special sale on balloons. They have two sizes available, 9-inch diameter and 12-inch diameter. How much larger is the circumference of the 12-inch balloon? Using the formula for the volume of a sphere, $V = \frac{4}{3} \pi r^3$, determine the amount of helium needed to fill each of the balloons. Using the formula for the surface area of a sphere, $SA = 4\pi r^2$, determine the surface area of each of the balloons.

B. Mrs. Sandler is going to invest \$700 in a Certificate of Deposit (CD) at her bank for 5 years at an annual interest rate of $3\frac{1}{2}\%$ compounded annually. What will be the value, A , of the CD at the end of the 5 year period? Use the formula, $A = p(1 + r)^t$ where A is the final amount (value), p is the initial amount invested, r is the annual interest rate, and t is the time in years.

C. The formula $F = \frac{n}{4} + 37$ can be used to determine the temperature in degrees Fahrenheit, F , when n is the number of cricket chirps per minute. If a cricket chirps 126 times per minute, determine the temperature. Rewrite the formula in the form $n =$, and determine the number of times a cricket chirps per minute if the temperature is 40° F.

D. The speed limit along a particular highway increased from 55 mph to 65 mph. How much time will be saved on a 100-mile trip?

E. Students can investigate the concept of density by finding objects for which both the volume and the mass can be determined. Objects might include a container of food a block of wood or a textbook. (Divide the mass by the volume to determine density.)