

- radius of the first, and the radius of the third canister is 2 centimeters greater than the radius of the second.
- Write algebraic expressions for the radii of the three canisters.
  - Write an expression for the volume of each canister.
  - Write an expression for the total volume of the set of canisters. Express the volume as a polynomial.
100. A company makes cylindrical storage drums in three different sizes: the smallest drum is 2 feet tall, the middle-sized drum is 3 feet tall and has a radius 6 inches greater than that of the smallest, and the largest drum is 4 feet tall and has a radius 1 foot greater than that of the smallest.
- Write algebraic expressions for the radii of the three drums.
  - Write an expression for the volume of each drum.
  - What is the total volume of a set of storage drums, one of each size? Express the volume as a polynomial.
101. a. Are the expressions  $x^2 - y^2$  and  $(x - y)^2$  equivalent?  
 b. Factor  $x^2 - y^2$ , if possible.  
 c. Expand  $(x - y)^2$ .
102. a. Are the expressions  $x^2 + y^2$  and  $(x + y)^2$  equivalent?  
 b. Factor  $x^2 + y^2$ , if possible.  
 c. Expand  $(x + y)^2$ .
103. a. Are the expressions  $x^3 - y^3$  and  $(x - y)^3$  equivalent?  
 b. Factor  $x^3 - y^3$ , if possible.  
 c. Expand  $(x - y)^3$ .
104. a. Are the expressions  $x^3 + y^3$  and  $(x + y)^3$  equivalent?  
 b. Factor  $x^3 + y^3$ , if possible.  
 c. Expand  $(x + y)^3$ .

**B**

105. a. Write an expression for the area of the square.  
 b. Express the area as a polynomial.  
 c. Divide the square into four pieces whose areas are given by the terms of your answer to (b).

