## Review 8-4

- 1. What is the dimension of the matrix product AB if A is a  $p \times q$  matrix and B is a  $q \times r$  matrix?
- **2.** Count the number of scalar multiplications to multiply A and B where A is a  $p \times q$  matrix and B is a  $q \times r$  matrix.
- **3.** Count the number of scalar multiplications where the dimensions of  $A_1$ ,  $A_2$  and  $A_3$  are  $10\times100$ ,  $100\times5$ , and  $5\times50$ , respectively.
- (1)  $(A_1A_2)A_3$

(2)  $A_1(A_2A_3)$ 

**4.** Fully parenthesize the product  $A_1A_2A_3A_4$ . (There are five distinct ways.)