

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 10×100 , 100×5 , and 5×50 , respectively.

(1) $(A_1 A_2) A_3$

(2) $A_1 (A_2 A_3)$

4. Fully parenthesize the product $A_1 A_2 A_3 A_4$. (There are five distinct ways.)