MATRIX-MULTIPLY-RECURSIVE(A, B, C, n)

1 **if** $n == 1$
2   // Base case.
3        $c_{11} = c_{11} + a_{11} \cdot b_{11}$
4   **return**
5 // Divide.
6 partition A, B, and C into $n/2 \times n/2$ submatrices
        $A_{11}, A_{12}, A_{21}, A_{22}$; $B_{11}, B_{12}, B_{21}, B_{22}$;
        and $C_{11}, C_{12}, C_{21}, C_{22}$; respectively
7 // Conquer.
8 MATRIX-MULTIPLY-RECURSIVE($A_{11}, B_{11}, C_{11}, n/2$)
9 MATRIX-MULTIPLY-RECURSIVE($A_{11}, B_{12}, C_{12}, n/2$)
10 MATRIX-MULTIPLY-RECURSIVE($A_{21}, B_{11}, C_{21}, n/2$)
11 MATRIX-MULTIPLY-RECURSIVE($A_{21}, B_{12}, C_{22}, n/2$)
12 MATRIX-MULTIPLY-RECURSIVE($A_{12}, B_{21}, C_{11}, n/2$)
13 MATRIX-MULTIPLY-RECURSIVE($A_{12}, B_{22}, C_{12}, n/2$)
14 MATRIX-MULTIPLY-RECURSIVE($A_{22}, B_{21}, C_{21}, n/2$)
15 MATRIX-MULTIPLY-RECURSIVE($A_{22}, B_{22}, C_{22}, n/2$)