Lab 8 – Exercise 3
Matrix Multiplication

GIVENS : *(none)*
RESULT : *(none)*
INTERMEDIATES : a   *(reference to a matrix of integers)*
                   b   *(reference to a matrix of integers)*
                   aRows   *(number of rows in matrix A)*
                   aCols   *(number of columns in matrix A)*
                   bRows   *(number of rows in matrix B)*
                   bCols   *(number of columns in matrix B)*
                   c   *(reference to the product of matrix A and B)*
HEADER : main()
BODY :

     (Get the data from the user)
     print("Enter the number of rows in matrix A: ")
     aRows ← readInteger()
     print("Enter the number of columns in matrix A: ")
     aCols ← readInteger()
     (Call the algorithm to read in the data for the matrix)
     a ← readIntMatrix(aRows, aCols) *(assume this algorithm is availble)*
     print("Enter the number of rows in matrix B: ")
     bRows ← ReadInteger()
     print ("Enter the number of columns in matrix B: ")
     bCols ← ReadInteger()
     (Call the algorithm to read in the data for the matrix)
     b ← readIntMatrix(bRows, bCols) *(assume this algorithm is available)*
     (Call the algorithm to multiply the matrices)
     c ← multMatrices (a, aRows, aCols, b, bRows, bCols)
     (Print the result – assume this algorithm is available)
     printLine("The product matrix C is: ")
     printMatrix(c, aRows, bCols)

GIVENS:
      a   *(reference to a matrix of integers)*
      b   *(reference to a matrix of integers)*
      aRows *(number of rows in matrix A)*
      aCols   *(number of columns in matrix A)*
      bRows *(number of rows in matrix B)*
      bCols   *(number of columns in matrix B)*
RESULT:
      c   *(reference to the product of matrix A and B with aRows rows*
                          and bCols columns)
INTERMEDIATES:
      row   *(index of the row for C (i))*
      col   *(index of the column for C (j))*
      index   *(index for the sum (k))*
      sum   *(intermediate sum)*
HEADER: c ← multMatrices(a, aRows, aCols, b, bRows, cCols)
BODY: