Problem 1: Suppose you have a set of 2-d input vectors. Write a program that loops over the input vectors and finds the pair with the minimum magnitude. Print it to the screen. The list of vectors should be input from the command line.

The best case is to make a very large “minimum” value initially. Then, upon looping through the input pairs, you update the minimum value if “this” minimum value is smaller.

Problem 2: Create a program that calculates the factorial of an unsigned integer, if the integer is less than 20. This should use a function called "factorial" that computes the factorial.

You can solve this problem either with recursion or with a do—while loop.

Problem 3 PHY 505 ONLY: Repeat Problem 2, but if the input is larger than 20, create a function called "Stirling" that will use Stirling's approximation to compute its logarithm instead.

This is similar to problem 2 but requires two separate functions, and the main execution should handle the “if—else” statement.