**Lab 7**Name: Denis Nadarevic  
ID: 104445626  
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Question 1, Part B)

Short – The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 8. The largest value this type can hold is 32,767, but 8! outputs 40,320.  
Unsigned short - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 9. The largest value this type can hold is 65,535, but 9! outputs 362,880.

Int - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 13. The largest value this type can hold is 2,147,483,647, but 13! outputs 6,227,020,800.

Unsigned Int - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 13. The largest value this type can hold is 4,294,967,295, but 13! outputs 6,227,020,800.

Long - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 13. The largest value this type can hold is 263 -1 , but 13! outputs 6,227,020,800.

Unsigned Long - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 13. The largest value this type can hold is 264 -1, but 13! outputs 6,227,020,800.

Long long - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 25. The largest value this type can hold is 263 -1, but 25! outputs approximately 1.5511 x 1025.

unsigned Long Long - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 25. The largest value this type can hold is 264 -1, but 25! outputs approximately 1.5511 x 1025.

Long double - The program begins to output an incorrect result for this variable type when you input anything greater than or equal to 3249. The largest value a double can hold is 1.79769 x 10308 but 3249! Outputs 6.412337 x 1010000.

C) You can determine what the exact factorial number is that causes **unsigned long long int** to fail by looking at the **long double**. **Unsigned long long int** fails when computing the factorial of 25 but the **long double** gives the exact factorial.