2) Are the process ID numbers of parent and child threads the same or different? Why?

Yes, because threads within a process share the same process ID.

4) Does the program give the same output every time? Why?

The program may not give the same output every time it is run because the execution order of the threads is not guaranteed.

5) Do the threads have separate copies of glob_data?

No, they don't.

7) Do the output lines come in the same order every time? Why?

No, the output lines may not come in the same order every time the program is run because the scheduling of threads is non-deterministic.

9) Did this_is_global change after the threads have finished? Why?

Yes, this_is_global changed after the threads have finished. It was initially set to 1000, but both threads incremented it by 1, making it 1002.

10) Are the local addresses the same in each thread? What about the global addresses?

No, they are different, as each thread has its own stack memory where local variables are stored. However, the global addresses are the same for both threads because they share the same global memory.

11) Did local_main and this_is_global change after the child process has finished? Why?

After the child process has finished, local_main in the parent process remains unchanged at 17, whereas this_is_global also remains unchanged at 17. This is because child processes have their own separate memory space, and any changes made by the child process will not affect the parent process.

12) Are the local addresses the same in each process? What about global addresses? What happened

The local addresses in each process are different because each process has its own stack memory where local variables are stored. However, the global addresses appear to be the same in both processes, as the child process is created as a copy of the parent process, including the memory layout.

14) How many times the line tot_items = tot_items + *iptr; is executed?

50,000 * 50= 2,500,000

15) What values does *iptr have during these executions?

have the values 1 through 50,

16) What do you expect Grand Total to be?

46375137, it differ in each run.

17) Why you are getting different results?

because of race conditions.