

CSSE 332 -- OPERATING SYSTEMS

Introduction to Memory Organization and Safety

Name: _____

Question 1. (5 points) Before running anything in the three sessions, and for the next lab, which command should you always run first?

Question 2. (5 points) After each session and after the lab, which command should you run?

Question 3. (5 points) Assume we make a function call to a function `foo`. How does `foo` know which instruction to go back to once it returns?

Question 4. (5 points) In the `i386` architecture, where is this value stored? What about the `RISC-V` architecture?

Question 5. Assume we would like to make a call to the function `foo` with arguments `(1, 2, 3)`.

(a) (5 points) How are the arguments 1, 2, and 3 passed to `foo` in the `i386` architecture?

(b) (5 points) Write down the `i386` instructions that correspond to the C statement `foo(1,2,3);`.

Question 6. (5 points) Assume the function `foo` creates three **local** variables `x`, `y`, and `z`. Where are `x`, `y`, and `z` stored with respect to the `foo`'s arguments?

Question 7. (5 points) What do we call the area of memory that contains a function's return information, its arguments, and its local variables?

Question 8. (10 points) Based on your previous answers, draw that area of memory for a call `foo(1,2,3)` to a function `foo` that defines two local variables, `x` and `y`.