CS162 Midterm
Introduction to Computer Science

Name: _____;

(25 points**) Getting Started with C++**

Fill in the blank – *here are your choices for the following question (not all of these answers will be used)*

=	==	<	<=	()	<>	;	!>
{}	#	##	!	+	+=	=+	++

1. Every complete statements ends in a _____
2. Preprocessor directives begin with a _____
3. The _____ always requires a variable on the left hand side
4. For an "if" statement, the _____ operator returns false if the left operand is greater than the right operand.
5. We use the _____to contain the body of the if statement when there are multiple statements.
6. The_____ operator increments our variable by 1.
7. The_____ operator assigns to the left operand the result of adding the left and right operands together.
8. The_____ and _____ symbols above are not legal C++ operators.
9. The _____ operator compares two values for equality.

Do some Calculations and place the answer in the blank –

Assume your variables ALWAYS start with these values

num1 is 10 *num2 is 15* *num3 is 2* *num4 is 5*

10. num1 + 1; num1 is _____
11. ++num1; num1 is _____
12. num2++; num2 is _____
13. num3 +=num4; num3 is _____ num4 is _____

(25 points**) Getting Started with C++**

Fill in the blank – *here are your choices for the following question (not all of these answers will be used)*

while	*block*	*iteration*	*const*	*do while*	*until*
infinite	*undefined*	*loop invariant*	*&&*	||	++

14. _____ is memory that cannot be changed once it is stored
15. _____ is a sequence of statements enclosed in curly brackets
16. _____ loop may never actually execute
17. _____ represents each time through a loop
18. The _____becomes true when both operands are true, but is false otherwise
19. Write the truth table for the || operator:

Fill in the blank *with your own ideas!*

20. A _____ variable is one defined inside a function's body
21. A _____ tells the compiler that a function exists but may not have been defined yet.
22. If a function doesn't return a value, _____ appears as the returned type.
23. Using _____ means that a copy of the argument is made when calling the function.
24. Using _____ means that the function is sharing the calling routine's memory for the argument
25. Before you can call a function it must be _____ or _____.

(25 points**) Arrays in C++**

26. **Create an array** large enough to hold the phrase "Great Job!"

27. Now, show how to read this is from the user and store it into the array:

28. Write a loop to count the number of lowercase letters. **Use a for loop.**

29. Now, what if the above was to be a function? Write the prototype statement for it.

30. Rewrite the above loop using a while loop:

(25 points**) Functions and Arguments**

31. Give an example of a **function prototype** (named display) that passes an **floating point number by value and returns nothing:**

Show how you could call this function: *(include all variable definitions)*

32. Give an example of a **function prototype** (named input) that passes a floating point value **by reference and returns nothing:**

Show how you could call this function: *(include all variable definitions)*

33. Give an example of a **function prototype** (named input) that has no arguments **and returns a true or false value:**

Show how you could call this function: *(include all variable definitions)*

34. Design a **function prototype for an input function** that is supposed to read in an array of characters and allow the calling routine (eg., main) to have access to this array (without using globals)

Show how you could call this function: *(include all variable definitions)*