**hName:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

For each of the below questions, write a short sentence or two to express (in your own words) your answer. Keep the answers short, but use complete, correct, English sentences.

If it helps to clarify the questions, feel free to mentally prefix all the questions with the phrase "According to the video…"

1. After you’ve watched all the videos, please answer this question:  
   Of all the videos that you watched, if you could pick one video to be re-recorded by the instructor outside of class which would you choose? Why?  
   (Keep in mind the recording outside of class will omit any pauses from the instructor answering student questions, have less hemming and hawing, etc, and generally be more concise)

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| < Write your answer here > |

**VIDEO: Basic Parameters**

1. For an instance method, what do I need to have (in my program) before I have can have my program call the instance method?

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1. Copy the example from the video (up to the 1:30 mark) of defining a class named Demo with a method named Triple, along with an example of calling that method from within **main**. (At this point the Triple method doesn’t actually do anything)

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1. How do you add a parameter to the Triple method’s definition?  
   How do you pass the value 7 into the method call for Triple in **main**?

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1. Does the name of the parameter (in the method’s definition) have any connection to any variables declare in the **main** function?

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1. Briefly, intuitively describe what the “Call stack” is, and what “stack frames” are.

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1. Will changing the value of **x** in the **Triple** method ever affect the value of **num** in the **main** method?

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1. If you want to list out multiple parameters, how do you separate them? How would you specify that you want an integer parameter named **x**, and a double named **y**.

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**VIDEO: Basic Return Values**

1. Briefly, intuitively describe what “Default parameters” are used to accomplish.

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1. Copy down the example from the video that has the Triple method taking it’s parameter, tripling it, and then sending that new value back:

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1. When Visual Studio tells you that your method has the “Not all code paths return a value” error, what problem does your code have and how do you fix it?  
   (Explain this clearly **in your own words**)

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1. If a method produces a return value are you required to make use of that return value in, say, **main**?

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**VIDEO: 02\_String\_Compare.mp4: Q + A: String Comparison with ==, String.Compare**

1. During the execution of the following code snippet, how many string objects will be created? Once the snippet has finished, what object will **input** refer to? What object will **input2** refer to?  
   string input= “ok”;  
   string input2= “ok”;

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| < Write your answer here > |

1. During the execution of the following code snippet, how many string objects will be created? Once the snippet has finished, what object will **input** refer to? What object will **input2** refer to?  
   string input= (string)“ok”.Clone();  
   string input2= (string)“ok”.Clone();

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| < Etc. > |

1. In C#,what does the double-equals ( == ) operator do? Continuing the code snippet from the prior question, will the following evaluate to true or false?  
   if( input == input2 )

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1. What are the three possible results that the String.Compare( string1, string2, true ) method might produce? What does each value mean?

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1. What does the ASCII standard define? How does Unicode differ from ASCII?

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1. How can you control whether String.Compare is comparing the two strings in a case-sensitive manner or a case IN-sensitive manner?

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**VIDEO: 04\_Basic\_Array\_Stuff.mp4: Basic Array of Primitive Types**

1. Give some examples (2-3) of C#’s “primitive data types” or “simple data types”.  
   What do all primitive/simple types have in common?

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1. Is an array a simple type? How do we know?

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1. Briefly, intuitively, what does **the heap** contain?

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1. In terms of the length of time that variables and objects exist, how are the stack and the heap different?

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1. When C# creates an array of integers, what value will C# fill the array in with? What value is used to fill in an array of doubles?

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1. What is a good way to think about your computer’s memory (about your computer’s RAM)?

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1. When the instructor talks about something being located at memory address 70,000 where is that thing located in RAM (explain this using the intuitive model you described in the previous question)?

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1. What is the value of nums at minute 15? What does this value represent / what does it mean?

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1. Give a short C# snippet to demonstrate how you would put the value 20 into slot 0 in the array referred to by the **nums** variable.  
   Also give a short C# snippet to demonstrate how you would print out the value stored in slot 0 in the array referred to by the **nums** variable.

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1. In C#, what is the index/address of the first element of all arrays?

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1. If there are five elements in the array, what is the highest valid index?  
   If there are **N** elements in the array, what is the highest valid index?

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1. In C#, if you create an array with 5 slots can you assign a value to slot 10?

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1. In C#, can you change the size of an array? If not, then what can you do that’s equivalent to changing the size of the array?

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1. Typically, when you resize an array, is it a good idea to increase the size of the array by only 1 new element? Why or why not?

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1. Memory that you cannot use because you have no variables that refer to it (directly or indirectly) is called what?

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1. If C# (or Java) runs out of memory, what does it do? What is this process called?

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1. Why is it safe for the computer to jump directly to element 10 of an array (rather than searching through memory, slot by slot, for element 10)?

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1. If you wanted to print how many elements are in an array, how could you do that? (Give a brief snippet of C# code)

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1. Why is it useful to choose the size of an array (when we first create/allocate the array) using a variable?

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1. Copy the example C# code that can print out all the elements of an array into the space below

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1. Briefly explain how your code in your answer to the previous question works.

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**VIDEO: 05\_How\_To\_Adjust\_Console\_Buffer.mp4: How To Adjust The Console's Buffer Size**

1. How can you adjust the console’s buffer size in Microsoft Windows? Assuming that the console window is open, list each of the steps that you need to go through (first click here, then click this, etc, etc)

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**VIDEO: 06\_Array\_Params.mp4: Arrays as Parameters (syntax)**

1. When calling a method that accepts an array as a parameter, how do you print the name of the array?  
   (I.e., in main, how do you write out the name of the array)

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1. In the example, how was the array parameter declared for the PrintArray method?  
   Do you need to include square brackets in the method’s definition?

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1. Copy over the entire definition for the Demo class and the PrintArray method (use the version that has only the array parameter)

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**VIDEO: 07\_Pass\_By\_Reference\_Value.mp4: Arrays as Parameters (pass by reference vs. pass by value)**

1. In the example in the video at the 2:00 minute mark, what value do both **vals** and **nums** have? What does this mean in terms of which actual block of memory each one is referring to?

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1. Because of your answer to the prior question, executing the C# code for nums[1] = 10; in the PrintArray method has what side effect?

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1. What is the name for passing a variable this way?

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1. Fill in the blank: “When passing a simple type, you actually get a \_\_\_\_\_\_\_\_\_”

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1. At the 5:00 minute mark in the video, if you change the value of y what effect does that have on the variable x?

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1. What is the name for passing a variable this way?

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**VIDEO: 08\_Return\_Values.mp4: Arrays as return types**

1. Copy down the example that demonstrates how to return an array from a new MakeArray method from the video (at the 1:30 mark)

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1. When returning an array, do you use square brackets?   
   Give a short C# snippet to demonstrate how one might return an array named newNums:

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1. Describe (briefly and intuitively) the two different types of multidimensional arrays that are available in C#. What is the name of the second type?

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1. Copy down the example that demonstrates how to receive an array from the MakeArray method and assign it to a variable named differentName (around the 6:00 mark)

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1. Given the following code snippet, how many arrays are allocated? At the end of the snippet, which array does differentName refer to?  
   int[] differentName;  
   differentName = d.MakeArray(10);  
   differentName = d.MakeArray(10);

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