1. Describe how a counter controlled iteration structure works. Include each syntax item that is required to execute this structure successfully.  Provide a C for() statement syntax example with your response.

-int i;

while (i <= 8);

{

printf("%d", &i);

++i;

}

Whats needed- variable, condition, and increment/decrement

While I is less than 8, loop and print the value 8 times

1. Explain the difference between a for() and a switch statement. Provide real world examples of when you would use each.

For- runs a condition as long as its true

int i;

for (int i = 0; i <= 8; ++i);

{

printf("%d", &i);

}

Switch- used to check for a combination of characters or numbers

unsigned int aCount = 0;

unsigned int bCount = 0;

puts("Enter the letter grades");

puts("enter the EOF character to end input");

int grade;

while (grade = getchar()) != EOF){

switch (grade) {

case 'A':

case 'a':

++aCount;

break;

case 'B':

case 'b':

++bCount;

break;

default:

printf("entered wrong letter grade");

1. Explain why we would use a function in a C program. What are the three items that are needed to implement this structure correctly?

Functions are used to get more done with less work/ code. Three item needed for a function include a function call, function definition and an argument.

1. With functions we can pass arguments by value or by reference. Please describe the difference.

Value- makes copy of its value is made and passed to the called function.

Reference- caller allows the called function to modify the original variable’s value.

1. What is a recursive function? How does recursion relate to iteration?

Iteration- loops to repeat code

Recursive- calls itself to repeat the code

1. Added break;
2. I changed i++ to ++i
3. I added the math library
4. Took function out of main function
5. Put a semicolon after int cube(int y)