

1. Show how many lines of print are printed by each of the following:

```
int i, j, k;
i=0;
while(i<10)
{
    j = 0;
    while(j < 20)
    {
        k = 0;
        while(k < 30)
        {
            Console.WriteLine("Hello Mom");
            k++;
        }
        j++;
    }
    i++;
}
Lines Printed = _____
```

```
int i = 0, j;
while(i < 4)
{
    Console.WriteLine("Hello mom");
    j = 6;
    while(j >= 0)
    {
        Console.WriteLine("I like Jello");
        j--;
    }
    Console.WriteLine("bananas");
    i += 2;
}
Lines printed = _____
```

2. Write a line of C# code to implement the following equation. Take all variables to be doubles.

$$x = \frac{y + b/c - d^4}{13z + 12.5}$$

3. If $i = 3$, $j = 12$, and $k = 4$, determine whether each of the following is TRUE or FALSE.

A) $(!(i+j) < 20) \&\&(i==3)$ _____ B) $((!(j==12) || !(k < 7)))$ _____

4. What is printed by the following sequence.

```
int i = 3, j = 11;
double k;
k = j/i;
Console.WriteLine("{0}, {1}", j/i, k);
```

Printed results

5. Give at least two advantages to using functions to modularize a program.

6. The statements below prompt the user to enter two integers called i and j . Write an *if block* to print the value of i and j only if the value of i is in the range $(10 \leq i < 100)$ and i is greater than j . If this is not the case your if block should print only the value of i .

```
int i, j;
Console.Write("Enter an integer...");
i = Convert.ToInt32(Console.ReadLine());
Console.Write("Enter a second integer...");
j = Convert.ToInt32(Console.ReadLine());
// Put your if block here
```

7. Show what is printed by the following and fill in the memory map.

<pre style="font-family: monospace; font-size: 0.9em;"> static void Main(string[] args) {int a = 1, b = 2, c = 3; Console.WriteLine ("{0}, {1}, {2}", a, b, c); c = Fun1(a, b); Console.WriteLine ("{0}, {1}, {2}", a, b, c); } static int Fun1(int x, int y) {int a; a = x; x = y; y = a; Console.WriteLine ("{0}, {1}, {2}", a, x, y); return x; } </pre>	<div style="text-align: center; border-bottom: 1px solid black; margin-bottom: 5px;">Printed Results</div> <div style="text-align: center; margin-bottom: 5px;">_____</div> <div style="text-align: center; margin-bottom: 5px;">_____</div> <div style="text-align: center; margin-bottom: 5px;">_____</div> <div style="text-align: center; margin-bottom: 5px;">_____</div> <div style="text-align: center; margin-bottom: 5px;">_____</div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 33%; padding: 2px;">Fun1</th> <th style="width: 33%; padding: 2px;">Main</th> <th style="width: 33%; padding: 2px;">Data</th> </tr> </thead> <tbody> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> <tr><td style="height: 15px;"> </td><td> </td><td> </td></tr> </tbody> </table>	Fun1	Main	Data																														
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8. Write a program which prints the powers of 2 from 2^0 to 2^{16} on successive lines. *Do not use the pow function.*

9. Write a *function* which accepts two integer arguments name `max` and `min` and returns an `int`. Your function should input a number from the user and return that number if and only if it is greater than or equal to `min` AND less than or equal to `max`. Otherwise, it should return a 0. Name your function `MaxMin`.