Conditionals, For Loop

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1. Conditionals. Study the following code:

```
cout << " statement A\n";
if (x > 0)
        cout <<"statement B\n";
else if (x < 0)
        cout << "statement C" << endl;
else
        printf ("statement D\n");
printf( "statement E\n");
```

(a) Which of the statements above (A, B, C, D, E) will be printed if x < 0?

A C

(b) Which of the statements above will be printed if x == 0?

A E

(c) Which of the statements above will be printed if x > 0?

A B

4: For Loop Statements

Loop at the loop statements below and try to predict what will be the result of executing the loop. Then run the code in your computer to verify your answers. It's ok if you didn't get it right the first time. Carefully analyze the code and try to enhance your understanding of loops.

a) What value will be printed?

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```
    i = 10
    for (int x=0;x<5;x++)
        i +=x; cout << i << endl;
```

b)
```
i = 10
for (int x=0;x<5;x++)
    i +=i;

printf(i);
```

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Short Programs

5: Loops. Write a program to have the user input three (3) numbers: (f)rom, (t)o, and (i)ncrement. Count from f to t in increments of i, inclusive of f and t. For example, if the input is f == 2, t == 24, and i == 4, the program would output: 2, 6, 10, 14, 18, 22.

See the code

6: Factorial. The factorial of a number is defined as the product of all values from one to that number. A shorthand for N factorial is N! where N! == factorial (N) == 1 * 2 * 3 * … * (N-2) * (N-1) * N!. So 4! == 1 * 2 * 3 * 4. Write a program such that given N, the value N! is returned.

See the code