Midterm 1 Prep

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if Problem 1

Study this code.

```cpp
bool x = true, y = false;
int z = 5
if( !(x && y) ) {
    if(z >= 0) {
        cout << 'A' << endl;
        if( z == -1 ) { cout << 'B' << endl; }
        cin >> z;
    }
    if( z < 0 ) {
        cout << 'C' << endl;
    }
}
```

It is impossible for 'B' to print?
- True  - False

It is impossible for 'A' and 'C' to print?
- True  - False
for Tracing Problem 1

Study this code.

```cpp
for(int x = 2; x < 12; x++) {
    x += 1;
    cout << x << endl; // cout statement 1
}
```

How many times will this loop iterate?
- 12
- 10
- 9
- 6
- 5

What will be printed by the cout statement 1?
for Tracing Problem 2

Trace the behavior of the following for loop. Note: abs() is the C library function to compute absolute value.

```c
int x = 1, y = 7;
for( ; abs(x-y) > 1; x++) {
    x += 1;
    y -= 1;
    cout << x << " " << y << endl; // cout statement 1
}
cout << x << endl; // cout statement 2
```

What will be printed the first time that `cout` statement 1 executes.

- 1 7
- 2 6
- x y
- 3 6
- 5 4

What will be printed the second time that `cout` statement 1 executes.

- 2 6
- x y
- 3 5
- 4 5
- 5 4

What NUMBER be printed by the `cout` statement 2.

- 2
- 3
- 4
- 5
- 6
- 7
- None of the above
SOLUTIONS
if Problem 1

Study this code.

```cpp
bool x = true, y = false;
int z = 5
if( !(x && y) ) {
    if(z >= 0) {
        cout << 'A' << endl;
        if( z == -1 ) { cout << 'B' << endl; }
        cin >> z;
    }
    if( z < 0 ) {
        cout << 'C' << endl;
    }
}
```

It is impossible for 'B' to print?
- True  False

It is impossible for 'A' and 'C' to print?
- True  False
for Tracing Problem 1

Study this code.

```cpp
for(int x = 2; x < 12; x++) {
    x += 1;
    cout << x << endl; // cout statement 1
}
```

How many times will this loop iterate?

- 12
- 10
- 9
- 6
- 5

What will be printed by the cout statement 1?

- 3
- 5
- 7
- 9
- 11
Trace the behavior of the following for loop. Note: \texttt{abs()} is the C library function to compute absolute value.

```c
int x = 1, y = 7;
for( ; abs(x-y) > 1; x++) {
    x += 1;
    y -= 1;
    cout << x << " " << y << endl; // cout statement 1
}
cout << x << endl; // cout statement 2
```

What will be printed the first time that \texttt{cout statement 1} executes.

- [ ] 1 7
- [x] 2 6
- [ ] x y
- [ ] 3 6
- [ ] 5 4

What will be printed the second time that \texttt{cout statement 1} executes.

- [ ] 2 6
- [ ] x y
- [ ] 3 5
- [x] 4 5
- [ ] 5 4

What NUMBER be printed by the \texttt{cout statement 2}.

- [ ] 2
- [ ] 3
- [ ] 4
- [x] 5
- [ ] 6
- [ ] 7
- [ ] None of the above