COMP110 - Optional WS 00 - Name: _____ PID: _____

1. Write the boolean value each expression evaluates to:

1.1 `true || false`
true

1.2 `-1 > -8`
true

1.3 `false && !true`
false

1.4 `"happy" === "joyful"`
false

1.5 `(4 * 5) === (40 / 2)`
true

1.6 `false || false`
false

1.7 `12 <= (2 * 8 - 4)`
true

1.8 `1 === -1`
false

1.9 `false || (4 > 2 * 1 / 3)`
true

1.10 `(true && true) && false`
false

1.11 `!false || true !== true`
true

1.12 `!(22 + 2 / 6 === 50)`
true

1.13 `(!true && false) === false`
true

1.14 `!(5 > 2 || false) !== false`
false

1.15 `false === false || false`
true

2. Based on the code snippets, write the printed outputs in the box to the right.

```
let x = 0;
let y = 3;
let z = "1";

while (x < y) {
    z = z + y + x;
    x = x + 1;
}
print(x);
print(y);
print(z);
```

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3. Based on the code snippets, write the printed outputs in the box to the right.

```
let x = 10;
let result = "";

while (x >= 0) {
    if (x % 3 > 0) {
        result = result + x;
    } else {
        result = x + result;
    }
    x = x - 1;
}

print(result);
```

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4. With the following code snippet, what output will appear on the screen when the following values are used for `x` and `y`?

```

let x: number;
let y: number;
//see question for actual values of x and y

let z: number = 0;
x = x + 1;
if (x < y) {
    z = x ** y / 2;
} else {
    z = y % x;
}
z = z + 1;
print(z);
```

4.1 When `x = 3, y = 4`? **1**

4.2 When `x = 3, y = 6`? **2049**

4.3 When `x = 7, y = 2`? **3**

4.4 When `x = -5, y = 1`? **-1**

5. With the following code snippet, what output will appear on the screen when each of the following values is used for `x`?

```
1
2  let x: number; //see question for actual value of x
3
4  if (x < 50) {
5      if (x > 0) {
6          x = x * 2;
7          if (x < 0) {
8              x = x + 6;
9          } else {
10             x = x - 4;
11         }
12     } else {
13         x = x + 10;
14     }
15 } else {
16     if (x < 10) {
17         x = x - 5;
18     } else {
19         x = x / 3;
20         if (x < 50) {
21             x = x + 5;
22         }
23     }
24 }
25 if (x < 30) {
26     x = x + 2;
27 } else {
28     x = x - 5;
29 }
30 print(x);
```

5.1 When `x = 15`? **28**

5.2 When `x = 60`? **27**

5.3 When `x = 30`? **51**

5.4 When `x = -5`? **7**

5.5 Unreachable code is code that will never be executed (or reached) regardless of the value of `x`. In this code snippet, look for and circle any unreachable code. **line 8, line 17**

6. In the space below, write code that meets the specifications. Declare two variables, named `foo` and `bar`, both of type `number`. If `foo` is an even number and is greater than `bar`, print the string "fizzbang". If `foo` is not even, but is greater than `bar`, print "boom". If `bar` is bigger than `foo`, print "pow".

```
let foo: number;
let bar: number;

// there are many possible solutions
if (foo > bar) {
    if (foo % 2 === 0) {
        print("fizzbang");
    } else {
        print("boom");
    }
} else {
    print("pow");
}
```