QUIZ 3: Practice

Name: _____

Instructions:

1. Don't forget to **put your name on the quiz** (above).
2. Please write your answers in **clear handwriting**. If you write more than one answer to a problem, circle the one that you would like for me to grade.
3. Be aware of the time as you work on the quiz.
4. Don't forget that there is also a coding portion of this quiz (the take-home part). The written portion is only part of the quiz!
5. Please **show your work** so that I can give you partial credit. Some of these questions are prone to arithmetic mistakes, so the more you communicate your process, the better I am able to give you credit for what you do know.
6. Do your best and good luck!

GRADE: (Sarah will fill this out)

Problem	Score	Possible Points
Problem 1		5
Problem 2		2
Problem 3		2
Problem 4		6
Problem 5		5
Problem 6		5
Problem 7		5
Problem 8		6
Problem 9		4
Total		**40**

Problem 1. (5 points)

For each of the following statements, please specify the value and the data type of result:

(a) `let result = true && (false || true);`

What is the **value** of **result**? What is the **data type** of **result**?

(b) `let result = 8 % 3;`

What is the **value** of **result**? What is the **data type** of **result**?

(c) `let result = 18 / 3 ** 2;`

What is the **value** of **result**? What is the **data type** of **result**?

(d)
```
let a = "hello";
let b = " there";
let result = a + b
```

What is the **value** of **result**? What is the **data type** of **result**?

(e)
```
let myList = [[100, 150], [200, 200], [300, 250]];
let result = myList[2];
```

> What is the **value** of **result**?
>
> What is the **data type** of **result**?

Problem 2. (2 points)

Answer the following questions, given the variable artist:

```
const restaurant = {
        "id": "9LoUCGB2F2zwXY7LiI1Isg",
        "name": "Taco Diablo",
        "rating": 4,
        "image_url": "https://s3.yelpcdn.com/bphoto/pic.jpg",
        "display_address": "1026 Davis St, Evanston, IL 60201",
        "coordinates": {
            "latitude": 42.0468879038071,
            "longitude": -87.6863329067459
        },
        "price": "$$",
        "review_count": 459
    }
```

(a)
```
let result = restaurant.coordinates;
```

> What is the **value** of **result**?
>
> What is the **data type** of **result**?

(b)
```
let result = restaurant.display_address;
```

> What is the **value** of **result**?
>
> What is the **data type** of **result**?

Problem 3. (2 points)

Consider the following:

```
let a = 5;
let b = 20;
let c = 30;
let result = (a < b) && (b < c) && (a < c);
```

What is the **value** of **result**?

What is the **data type** of **result**?

Problem 4. (6 points)

Consider the following snippet of code)...

```
let a = 3;
let b = 5;
while (a < 20) {
    a *= 3;
    b += a;
    console.log(a, b);
}
```

Write what will be printed to the console after this code block executes:

Problem 5. (5 points)

Consider the following code for a martial arts game

```
function moveAvatar(buttonA, buttonB) {
   if (buttonA) {
       console.log("kick");
   } else if (buttonB) {
        console.log("jump");
   } else if (buttonA && buttonB) {
       console.log("jump kick");
   }
}

moveAvatar(true, true);  // “jump kick” should print to the screen
moveAvatar(true, false); // “kick” should print to the screen
moveAvatar(false, true); // “jump” should print to the screen
```

(a) What will print to the console?

(b) If you answered part (a) correctly, you noticed that the code has a “bug” (logic error) for the first function invocation (it prints something other than what it was supposed to):

```
moveAvatar(true, true);
```

How would you fix the moveAvatar function so that it works as expected?

Problem 6. (5 points)

Consider the following snippet of code....

```
const myList = [
   'apple', 'banana', 'orange', 'grapefruit', 'lemon',
   'peach', 'grapes', 'strawberry', 'blueberry', 'watermelon'
];
for (let i = 2; i < myList.length; i += 3) {
    console.log(myList[i]);
}
```

Write what will be printed to the console after this code block executes:

Problem 7. (5 points)

Consider the following snippet of code....

```
const myList = [
   'apple', 'banana', 'orange', 'grapefruit', 'lemon',
   'peach', 'grapes', 'strawberry', 'blueberry', 'watermelon'
];
for (let i = myList.length - 1; i >= 0; i -= 4) {
    console.log(myList[i]);
}
```

Write what will be printed to the console after this code block executes:

Problem 8. (6 points)

Consider the following snippet of code....

```
function func1(a, b) {
     return (a / b) + 3;
}

function func2(a, b) {
      return (a * b) % 3;
}

let x = func1(3, 2);
let y = func2(4, 2);
let z = func1(y, func2(5, 2));
```

What will happen when this code is executed? If information prints to the screen, write what the output would be below (don't forget to show your work):

What is the **value** of x?

What is the **value** of y?

What is the **value** of z?

Problem 9. (4 points)

The final questions should be answered given the variable **`btsMembers`**:

```
const tracks = [
    {
        id: "6dGnYIeXmHdcikdzNNDMm2",
        name: "Here Comes The Sun",
        album: {
            id: "0ETFjACtuP2ADo6LFhL6HN",
            name: "Abbey Road (Remastered)"
        },
        artist: {
            id: "3WrFJ7ztbogyGnTHbHJFl2",
            name: "The Beatles"
        }
    }, {
        id: "3Am0IbOxmvlSXro7N5iSfZ",
        name: "Strawberry Fields Forever",
        album: {
            id: "2BtE7qm1qzM80p9vLSiXkj",
            name: "Magical Mystery Tour (Remastered)"
        },
        artist: {
            id: "3WrFJ7ztbogyGnTHbHJFl2",
            name: "The Beatles"
        }
    }, {
        id: "2EqlS6tkEnglzr7tkKAAYD",
        name: "Come Together",
        album: {
            id: "0ETFjACtuP2ADo6LFhL6HN",
            name: "Abbey Road (Remastered)"
        },
        artist: {
            id: "3WrFJ7ztbogyGnTHbHJFl2",
            name: "The Beatles"
        }
    }
];
```

(a) What is the **data type** of `tracks`?

(b) Using the `tracks` variable, how would you output the **name** of the **third album** to the console? Write the code below:

(c) Using the `tracks` variable, how would you output the **name** of the **second track** to the console? Write the code below:

(d) Using the `tracks` variable, how would you output the **id** of the **first artist** to the console? Write the code below: