 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:

1. **let result = true && (false || true);**

|  |
| --- |
| What is the **value** of **result**?   **False**  What is the **data type** of **result**? **Boolean** |

1. **let result = 8 % 3;**

|  |
| --- |
| What is the **value** of **result**? **2.6**  (3)  What is the **data type** of **result**? **Number** |

1. **let result = 18 / 3 \*\* 2;**

|  |
| --- |
| What is the **value** of **result**? **3**   What is the **data type** of **result**? **Number** |

1. **let a = "hello";   
   let b = " there";**

**let result = a + b**

|  |
| --- |
| What is the **value** of **result**?   **Hello there**  What is the **data type** of **result**? **String** |

1. **let myList = [[100, 150], [200, 200], [300, 250]];**

**let result = myList[2];**

|  |
| --- |
| What is the **value** of **result**?   **[300, 250]**  What is the **data type** of **result**? **String** |

**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**](https://s3-media1.fl.yelpcdn.com/bphoto/fjBlhRrKiX4gsxRDlEXsnQ/o.jpg)**",**

**"display\_address": "1026 Davis St, Evanston, IL 60201",**

**"coordinates": {**

**"latitude": 42.0468879038071,**

**"longitude": -87.6863329067459**

**},**

**"price": "$$",**

**"review\_count": 459**

**}**

1. **let result = restaurant.coordinates;**

|  |
| --- |
| What is the **value** of **result**?  **"latitude": 42.0468879038071,**  **"longitude": -87.6863329067459**  What is the **data type** of **result**? **Object** |

1. **let result = restaurant.display\_address;**

|  |
| --- |
| What is the **value** of **result**?   **"1026 Davis St, Evanston, IL 60201",**  What is the **data type** of **result**?  **Object** |

**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**?   **TRUE**  What is the **data type** of **result**? **Boolean** |

**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:  **9, 14** |

**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**

|  |
| --- |
| 1. What will print to the console?      1. 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:  **Blueberry, apple, peach** |

**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"**

**}**

**}**

**];**

|  |
| --- |
| 1. What is the **data type** of **tracks**? 2. Using the **tracks** variable, how would you output the **name** of the **third album** to the console? Write the code below: 3. Using the **tracks** variable, how would you output the **name** of the **second track** to the console? Write the code below:      1. Using the **tracks** variable, how would you output the **id** of the **first artist** to the console? Write the code below: |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Problem 1. (5 points)**

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

1. **let result = true || (false && true);**

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

1. **let result = 6 % 5;**

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

1. **let result = 6 / 2 \*\* 2;**

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

1. **let myList = [6, 2, 17, 9, 3];**

**let result = myList[myList[4]];**

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

1. **let myList = [[100, 150], [200, 200], [300, 250]];**

**let result = myList[1];**

|  |
| --- |
| 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 artist = {**

**nickname: 'J-Hope',**

**name: { english: 'Jung Ho Seok', korean: '정호석' },**

**specialties: ['rapper', 'dancer', 'vocalist']**

**};**

1. **let result = artist.specialties;**

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

1. **let result = artist.name.english;**

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

**Problem 3. (2 points)**

Consider the following:

**let a = 150;**

**let b = 200;**

**let c = false;**

**let result = (a < b) && !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 = 1;**

**let b = 2;**

**while (b < 15) {**

**a \*= 2;**

**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 program, where days of the week are represented by integers (1=Monday, 2=Tuesday, 3=Wednesday, … , 7=Sunday):

**function printMessage(day) {**

**if (day >= 5) {**

**console.log(“It’s the weekend!!”);**

**} else if (day == 5) {**

**console.log(“We’re going on a field trip!”);**

**} else if (day % 2 == 0) {**

**console.log(“Today we’re studying English and Math”);**

**} else {**

**console.log(“Today we’re studying History and Science”);**

**}**

**}**

**printMessage(5); // print message for friday**

|  |
| --- |
| 1. What will print to the console?      1. If you answered part (a) correctly, you will note that the code has a “bug” (logic error). How would you fix the **printMessage** function body so that it printed *“We’re going on a field trip!”* (the correct message associated with Friday) instead? |

**Problem 6.  (5 points)**

Consider the following snippet of code....

**const myList = [**

**'Lucy', 'Charlie', 'Isha', 'Ling', 'Isiah',**

**'Francisco', 'Ana', 'Batuhan', 'Keira', 'Maya'**

**];**

**for (let i = 0; i < myList.length; i += 4) {**

**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 = [**

**'Lucy', 'Charlie', 'Isha', 'Ling', 'Isiah',**

**'Francisco', 'Ana', 'Batuhan', 'Keira', 'Maya'**

**];**

**for (let i = myList.length - 1; i >= 0; i -= 3) {**

**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) / 2;**

**}**

**function func2(a, b) {**

**return a % b;**

**}**

**let x = func1(3, 2 + 3);**

**let y = func2(4, 3);**

**let z = func1(y, func2(3, 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 btsMembers = [**

**{**

**nickname: 'RM',**

**name: { english: 'Kim Nam Joon', korean: '김남준' },**

**specialties: ['leader', 'rapper']**

**},**

**{**

**nickname: 'Jin',**

**name: { english: 'Kim Seok Jin', korean: '김석진' },**

**specialties: ['visual', 'vocalist']**

**},**

**{**

**nickname: 'Suga',**

**name: { english: 'Min Yoon Gi', korean: '민윤기' },**

**specialties: ['rapper']**

**},**

**{**

**nickname: 'J-Hope',**

**name: { english: 'Jung Ho Seok', korean: '정호석' },**

**specialties: ['rapper', 'dancer', 'vocalist']**

**},**

**{**

**nickname: 'Jimin',**

**name: { english: 'Park Ji Min', korean: '박지민' },**

**specialties: ['vocalist', 'dancer']**

**},**

**{**

**nickname: 'V',**

**name: { english: 'Kim Tae Hyung', korean: '김태형' },**

**specialties: ['dancer', 'vocalist', 'visual']**

**},**

**{**

**nickname: 'Jungkook',**

**name: { english: 'Jeon Jeong-guk', korean: '전정국' },**

**specialties: ['vocalist', 'dancer']**

**}**

**];**

|  |
| --- |
| 1. What is the **data type** of **btsMembers**? 2. Using the **btsMembers** variable, how would you output the **nickname** of the **third BTS band member** to the console? Write the code below: 3. Using the **btsMembers** variable, how would you output the **Korean spelling** of the **sixth BTS band member**’s **name** to the console? Write the code below:      1. Using the **btsMembers** variable, how would you output the **first specialty** of the **second BTS band member** to the console? Write the code below: |