Problem 1. (12 points)

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

(a) `let a = 12;`
    `let b = 10;`
    `let c = 5;`
    `let result = (c > a) || (b > a);`

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

(b) `let result = 10 % 3;`

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

(c) `let result = 4 ** 2 / 2;`

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

(d)
```
let name = "Jeeves";
let score = 850;
let result = `${name} scored ${score} points`;
```

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

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

(e)
```
let myList = [4, 2, 3, 1, 8, 21];
let result = myList[2] * myList[0];
```

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

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

(f)
```
let myList = [4, 2, 3, 1, 8, 21];
let result = myList[myList[2]];
```

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

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

Problem 2. (10 points)

Given the following snippet of code...

```javascript
let a = 0;
while (a < 16) {
    a += 3;
    if (a % 2 === 0) {
        console.log(a, 'is even');
    } else {
        console.log(a, 'is odd);
    }
}
```

What prints to the console after this code block executes?

Problem 3. (4 points)

Given the following snippet of code...

```
let a = true;
let b = true;
let c = false;
let result = null;

if (c) {
    result = 'horse';
} else if (!a || c) {
    result = 'donkey';
} else if (b && c) {
    result = 'mule';
} else {
    result = 'llama';
}
console.log(result);
```

What prints to the console after this code block executes?

Problem 4. (10 points)

Given the following snippet of code...

```
const fruit = [
    'apple', 'banana', 'orange', 'grapefruit', 'lemon',
    'peach', 'grapes', 'strawberry', 'blueberry', 'watermelon'
];

for (let i = 9; i > 0; i -= 4) {
    console.log(fruit[i]);
}
```

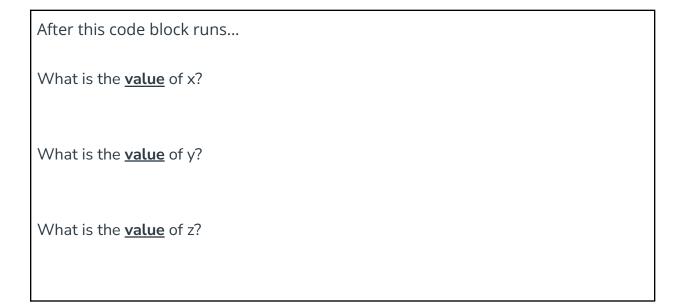What prints to the console after this code block executes?

Problem 5. (6 points)

Consider the following snippet of code:

```
function func1(a, b) {
    return b - a;
}

function func2(a, b) {
    return (a + b) / 2;
}

let x = func1(3, 5);
let y = func2(4, 2);
let z = func1(y, func2(5, 3));
```
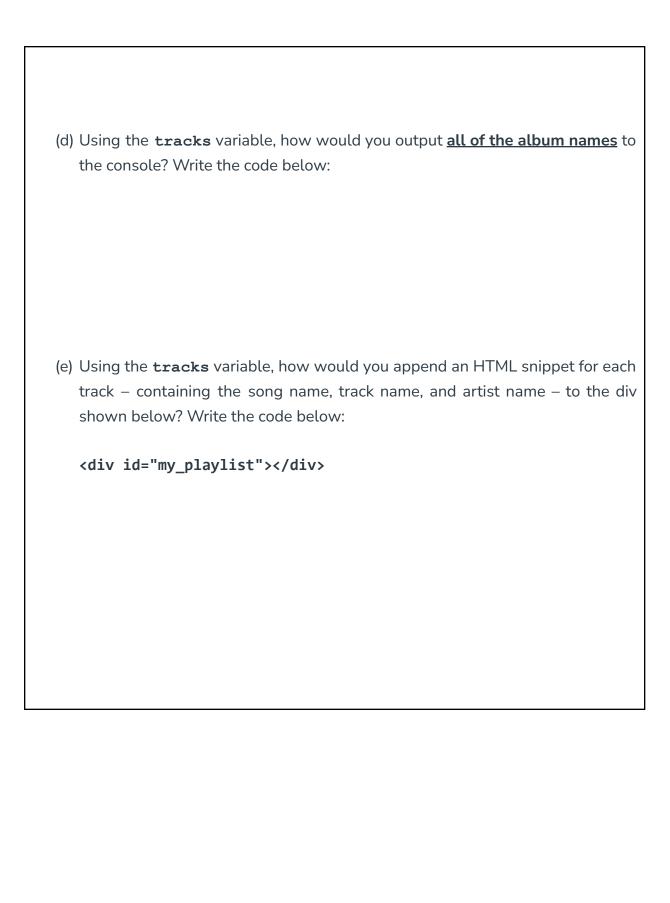
After this code block runs...

What is the **value** of x?

What is the **value** of y?

What is the **value** of z?

Problem 6. (8 points)

The final questions should be answered given the variable **tracks**:

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

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

(b) What is the **data type** of **tracks[0]**?

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

(d) Using the **tracks** variable, how would you output **all of the album names** to the console? Write the code below:

(e) Using the **tracks** variable, how would you append an HTML snippet for each track – containing the song name, track name, and artist name – to the div shown below? Write the code below:

```
<div id="my_playlist"></div>
```

Problem 7. (10 points)

Using any kind of loop that you want, write a program that prints out the **album name** for each track. In other words, your program should print the following:

```
Abbey Road (Remastered)
Magical Mystery Tour (Remastered)
Abbey Road (Remastered)
```

Your program should work for a track list of any length.