Paddle Game Questions

1. Provide a written response for your video that:
    - identifies the programming language;
    - identifies the purpose of your program; and
    - explains what the video illustrates.

The programing language of my code is javascript or p5js. The purpose of the program is to give other people a means of having fun. The video shows two difficulties of the game. First, it shows the easy difficulty which has five balls and the player has five health. I used this difficulty to also show the winning screen which features a menu button that will allow you to return to the introduction screen. I won by getting 10 balls to impact the top of my paddle. The amount of points needed to win increase with the difficulty. Then I showed the introductions that show up when the player presses and holds down the mouse while hovering over the button. Then I moved on to hard mode which has 15 balls, only 3 health, and a winning score of 20 points. I used this mode to demonstrate what happens when you run out of health. It will take you to a "Game Over" screen which has another menu button with the same function.

2. Describe the incremental and iterative development process of your program, focusing on two distinct points in that process. Describe the difficulties and/or opportunities you encountered and how they were resolved or incorporated. In your description clearly indicate whether the development described was collaborative or independent. At least one of these points must refer to independent program development.

3. Capture and paste the program code segment that implements an algorithm (marked with an oval) that is fundamental for your program to achieve its intended purpose. Your code segment must include an algorithm that integrates other algorithms and integrates mathematical and/or logical concepts. Describe how each algorithm within your selected algorithm functions independently, as well as in combination with others, to form a new algorithm that helps to achieve the intended purpose of the program. *(Approximately 200 words)*

The algorithm I chose takes the isColliding algorithm from the ball class and uses it to detect whether the ball impacts the paddle from the top or bottom of the paddle. The algorithm that I circled then goes into the balls array using a for loop and deletes the ball that touched the bottom of the paddle. This is shown in the balls.splice part. The isColliding method also subtracts health when the ball hits the underside of the paddle. Once the health reaches zero, another function detects it and changes the screen into the losing screen. These algorithms used together helps the game's losing

aspect function properly as well as add a conflict to the game, making it more entertaining on the whole.

4. Capture and paste the program code segment that contains an abstraction you developed (marked with a rectangle in section 3 below). Your abstraction should integrate mathematical and logical concepts. Explain how your abstraction helped manage the complexity of your program.

The abstraction that I boxed makes my code simpler by making it so that I do not have to write a whole set of new code when I want to make a new ball. All I would have to do is call the abstraction and enter the parameters. Then I can call it several times using a for loop and put that for loop into a function.

5. Capture and paste your entire program code in this section.
    - Mark with an oval the segment of program code that implements the algorithm and integrates mathematical and /or logical concepts.
    - Mark with a rectangle the segment of program code that represents an abstraction you developed.
    - Include comments or citations for program code that has been written by someone else.