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(Question 1A – 6 points) Given the following Bootstrap 5 device screen sizes:
Extra small: <576px Small: >= 576px Medium: >= 768px Large: >= 992px Extra Large: >= 1200px
Given the following HTML:

Given the following HTML:

```
<div class='row'>
  <div class='col-5'>Demo 1</div>
  <div class='col-7'>Demo 2</div>
</div>
<div class='row'>
  <div class='col-sm-4'>Content 1</div>
  <div class='col-sm-2'>Content 2</div>
  <div class='col-md-3'>Content 3</div>
  <div class='col-md-3'>Content 4</div>
</div>
```

Show (using the cells below to help with spacing) where the content would go on a **small** device and outline the boxes to indicate how many columns each div will have in the row. Note: you may not need all rows provided, but you will not need more rows. The demo lines have been done for you

Demo	1	Demo	2
Content 1		Content 2	
		Content 3	
		Content 4	

(Question 1B - 2 points) What is the result of `'1' + 1` (evaluated in Javascript)? What is the result of `'1' - 1`? Why do these Javascript expressions behave differently?

$'1' + 1 = '11'$ \Rightarrow number type will be converted to string type
 $'1' - 1 = 0$ \Rightarrow string type will be converted to number type

(Question 1C – 2 points) Create an anonymous function in JavaScript with a single argument. It will add one to the argument and return the result.

→ anonymous function in javascript is a function which don't have any name.

```
function (value) {  
    value = value + 1;  
    return value; }  
}
```


The following is in the body of some responsive HTML annotated with line numbers that is using bootstrap. You will modify this code to accomplish the given tasks for question 2.

```

01: <form>
02:   <label for="form1_init">Initial is: </label>
03:   <input type="number" id="form1_init" name="form1_init"> <br>
04:   <label for="form1_max">Max is: </label>
05:   <input type="number" id="form1_max" name="form1_max">
06:   <label for="form1_desc">Description is: </label>
07:   <input type="text" id="form1_desc" name="form1_desc">
08: </form>

09: <div class="container-fluid">
10:   <h1 id="toto">A small dog</h1>
11:   <p id="water">Melts a witch</p>
12:   <p id="tinman">Wants a heart</p>
13:   <div class="row" id="nav">
14:     <div class="col-sm-3" id="ml">MEAT LOAF</div>
15:     <div class="col-sm-3" id="br">BREAD</div>
16:     <div class="col-sm-3" id="pf">PINK FLOYD</div>
17:     <div class="col-sm-3" id="ch">CHICAGO</div>
18:   </div>
19:   <button type="button" class="btn btn-success">First</button>
20:   <button type="button" class="btn btn-warning">Second</button>

```

```

<script> function checker () {
  var max1 = document.getElementById("form1_max").value;
  alert(max1);

  var var1 = document.getElementById("br").innerHTML;
  var var2 = document.getElementById("ch").innerHTML;
  document.getElementById("br").innerHTML = var2;
  document.getElementById("ch").innerHTML = var1;
}
</script>

```

Question 2 (10 points)

Task 1 (2 points): Modify the desc input so that it has a default value of "roger". Give the line number of the HTML you are changing and what you are changing the line to.

Line #: 07

Modified to: `<input type="text" id="form_desc" name="form_desc" value="roger">`

Task 2 (6 points): Create a Javascript function named checker that will get the value of the max from the form and show an alert with its value. It should then swap the contents of the divs containing BREAD and CHICAGO. Write the Javascript and appropriate HTML tags below line 20 on the previous page.

Task 3 (2 points): Modify the HTML so pressing the Second button will call the function you wrote in task 2. Give the line number of the HTML you are changing and what you are changing the line to.

Line #: 20

Modified to:

`<button type="button" class="btn btn-warning" onClick="checker()"> Second </button>`

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Question 3A (6 points) Write a Javascript function (no HTML needed) that takes an array of numbers, creates an Object that contains the average of the numbers in even positions and the first value that is greater than 20 in the array (choose appropriate keys to use for these values), and returns the object.

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```
function (numbers) {
  avg = 0, sum = 0, count = 0, val = 0;
  for (var i = 0; i < numbers.length; i++) {
    if (i % 2 == 0) { count = count + 1;
      sum = sum + numbers[i]; }
    if (numbers[i] > 20) { val = numbers[i]; }
  }
  avg = sum / count;
  let object = {
    "average": avg,
    "val > 20": val
  }
  return object;
}
```

Question 3B (4 points) Given the following Javascript

```
function foo (somenumbers) {
  bar = 0
  for (num of somenumbers) {
    if (num % 2 == 0) bar -= num
    else bar += num
  }
  setTimeout(() => alert(`Result is ${bar}`), 3000)
}
```

What happens when `foo([5, 2, 3, 4, 6])` is called? Specifically what is the output and when/how is it displayed to the user?

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	bar
$(5 / 2 == 0) F$	5
$(2 / 2 == 0) T$	3
$(3 / 2 == 0) F$	6
$(4 / 2 == 0) T$	2
$(6 / 2 == 0) T$	-4

and

bar = bar - num | bar = bar + num

```

      5
    - 2
    ----
      3
    - 3
    ----
      0
    - 4
    ----
     -4
  
```

output

Result is -4, is displayed when the setTimeout function is executed after 3 seconds

Midterm 2

You are allowed to use your single page of hand written notes as a reference.

1 2 points

In Bootstrap which element type will we use as a convenient container for other elements in a responsive design?

- ☒ div
- ☐ head
- ☐ button
- ☐ footer

2 2 points

Variables starting with the character ____ signify a private variable.

- ☒ Underscore
- ☐ hash
- ☐ dollar sign
- ☐ Colon

3 2 points

Given the JavaScript definition

let array = [10, 20]

What is the result if we ask for the value in position 3

- ☐ We get the number 0
- ☐ We get the value 10
- ☐ An exception is thrown
- ☒ We get the value undefined

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4 2 points

Which of the following is not a Bootstrap class that can be used with a button?

- ☐ btn-warning
- ☐ btn-success
- ☒ btn-javascript
- ☐ btn-danger

5 2 points

Given the JavaScript definition

let object = {x:10, y:20}

which of the following would access the value of y?

- ☒ object[y]
- ☒ object["y"]
- ☐ object.get(y)
- ☐ object.x

The following is in the body of some responsive HTML annotated with line numbers that is using bootstrap. You will modify this code to accomplish the given tasks for question 2.

```
01:<form>
02:  <label for="form1_size">Size is: </label>
03:  <input type="number" id="form1_size" name="form1_size"> <br>
04:  <label for="form1_word">Word is: </label>
05:  <input type="text" id="form1_word" name="form1_word">
06:  <label for="form1_cost">Cost is: </label>
07:  <input type="number" id="form1_cost" name="form1_cost">
08:</form>
```

```
09:<div class="container-fluid">
10:  <h1 id="fred">Responsive Design</h1>
11:  <p id="wilma">Resize the browser window</p>
12:  <p id="betty">To see the effect</p>
13:  <div class="row" id="bit">
14:    <div class="col-sm-2" id="one">ALF </div>
15:    <div class="col-sm-2" id="two">BOGO</div>
16:    <div class="col-sm-2" id="three">GPU</div>
17:    <div class="col-sm-2" id="four">DOD </div>
18:</div>
19:<button type="button" class="btn btn-success">Opt1</button>
20:<button type="button" class="btn btn-warning">Opt2</button>
```

21 </script>

22 <p id="demo" form=""></p> <button = button opt1 "process repeated" >Try it </button>

23 function ~~process~~ processRepeat() {

24 document.getElementById("demo").innerHTML = "BOGO";

25 document.getElementById("demo").innerHTML = "h1. BOGO";

26 </script>

27 }

Question 2 (10 points)

Task 1 (2 points): Modify the size input so that it has a default value of 32. Give the line number of the HTML you are changing and what you are changing the line to.

Line #: 3

Modified to: `<input type="number" id="form1_size" name="form1_size" value="32">`

Task 2 (6 points): Create a Javascript function named `processRepeat` that will get the value of the word in the form, concatenate it with the contents of the `h1` element, and replace the contents of the `div` containing `BOGO` with the result. Write the Javascript and appropriate HTML tags below line 20 on the previous page.

Task 3 (2 points): Modify the HTML so pressing the `Opt1` button will call the function you wrote in task 2. Give the line number of the HTML you are changing and what you are changing the line to.

Line #: 19

Modified to: 15

Question 3A (6 points) Write a Javascript function (no HTML needed) that takes an array of numbers, creates an Object that contains the sum of the squares of the numbers and the largest number in the array (choose appropriate keys to use for these values), and returns the object.

```

<p id="demo"></p>

var
const num = [1, 2, 3, 4, 5, 6];
let text = "";
for (let i=0; i<num.length; i++) {
    num = num/length;
    document.getElementById("demo").innerHTML += num;
}

```

Question 3B (4 points) Given the following Javascript

```

function foo (somenumbers) {
    bar = 0
    for (num of somenumbers) {
        if (num % 2 == 0) bar += num
        else bar -= num
    }
    setTimeout(()=>alert(`Result is ${bar}`), 3000)
}

```

What happens when `foo([1, 2, 3, 4, 5, 6])` is called? Specifically what is the output and when/how is it displayed to the user?

In this function we get output after three seconds the output are 2, 4, 6

Midterm 2

You are allowed to use your single page of hand written notes as a reference.

1 2 points

The basic table styling can be done using which class?

- ☒ table
- ☐ table container
- ☐ tbl
- ☐ style table

2 2 points

If we have a variable which has reference for a div
let goDiv = document.getElementById("display")
how can we register a callback function to respond to a click event?

- ☐ Not possible since div elements don't respond to clicks
- ☐ clickEvent(goDiv, functiontocall)
- ☒ goDiv.onclick = functiontocall
- ☐ goDiv.set("functiontocall")

3 2 points

How are unordered lists styled with Bootstrap?

- ☐ using a class of list-group in a tag
- ☒ using a class of list-group in a tag
- ☐ using an id of list-group in a tag
- ☐ none of the above

4 2 points

Given the definition

```
let object = {x:10, y:20}
```

What is the result if we ask for the value of z?

- ☐ An exception is thrown
- ☐ We get the value 10
- ☐ We get the number 0
- ☒ We get the value undefined

5 2 points

Which of the following is NOT an example of a Java Script object?

- ☒ {}
- ☐ {}
- ☐ {name:"Kitty"}
- ☐ {id:5, position:"top"}