Solutions for MidTerm

Question 1:
Write a function that takes an array input and returns an array with squares of all the elements in the input array.
Example: Input [2, 3, 4, 5]
Output [4, 9, 16, 25]

Solution:
```javascript
const getSquares = (arr) => arr.map(num => num * num);

// Example usage
const input = [2, 3, 4, 5];
const output = getSquares(input);
console.log(output); // Output: [4, 9, 16, 25]
```
Explanation:
The `map()` method is used to create a new array by applying a function to each element of the original array.
Here, the function `num => num * num` computes the square of each number in the input array.

Question 2:
Create a component that calls the above function on a button click and displays the output as a text component.

Solution:
```javascript
import React, { useState } from 'react';
import { View, Text, Button, StyleSheet } from 'react-native';

const SquareCalculator = () => {
 const [output, setOutput] = useState([]);

 const getSquares = (arr) => arr.map(num => num * num);

 const handleButtonClick = () => {
  const input = [2, 3, 4, 5];
  const result = getSquares(input);
  setOutput(result);
 };
```

```jsx
  return (
    <View style={styles.container}>
      <Button title="Calculate Squares" onPress={handleButtonClick} />
      <Text style={styles.output}>
        {output.length > 0 ? `Output: ${output.join(', ')}` : 'Click the button to see the result'}
      </Text>
    </View>
  );
};

const styles = StyleSheet.create({
  container: {
    flex: 1,
    justifyContent: 'center',
    alignItems: 'center',
    padding: 20,
  },
  output: {
    marginTop: 20,
    fontSize: 18,
    fontWeight: 'bold',
  },
});

export default SquareCalculator;
```

Explanation:
1. The `useState` hook is used to manage the state for the output array.
2. When the button is clicked, the `handleButtonClick` function computes the squares of the numbers and updates the state.
3. The result is displayed in the `<Text>` component.