**EXPERIMENT 3**

**AIM:**

1. **Write a JavaScript program to calculate the volume of a cylinder. Volume of a cylinder: V = πr2h. Define variables and π as constant.**

**CODE:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Cylinder Volume Calculator</title>

</head>

<body>

<div class="container">

<h1>Cylinder Volume Calculator</h1>

<div class="form-group">

<label for="radius">Radius:</label>

<input type="number" id="radius" step="any" required>

</div>

<div class="form-group">

<label for="height">Height:</label>

<input type="number" id="height" step="any" required>

</div>

<button onclick="calculateVolume()">Calculate Volume</button>

<div class="result">

<p id="volumeResult"></p>

</div>

</div>

<script>

// Define the constant π const PI = Math.PI;

// Function to calculate the volume of the cylinder function calculateCylinderVolume(radius, height) {

return PI \* Math.pow(radius, 2) \* height;

}

// Function to handle the calculation and display function calculateVolume() {

// Get user input values

const radius = parseFloat(document.getElementById('radius').value); const height = parseFloat(document.getElementById('height').value);

// Validate input

if (isNaN(radius) || isNaN(height) || radius <= 0 || height <= 0) {

document.getElementById('volumeResult').innerText = "Invalid input. Please enter positive numbers for both radius and height.";

return;

}

// Calculate the volume

const volume = calculateCylinderVolume(radius, height);

// Display the result

document.getElementById('volumeResult').innerText = `The volume of the cylinder is: ${volume.toFixed(2)}`;

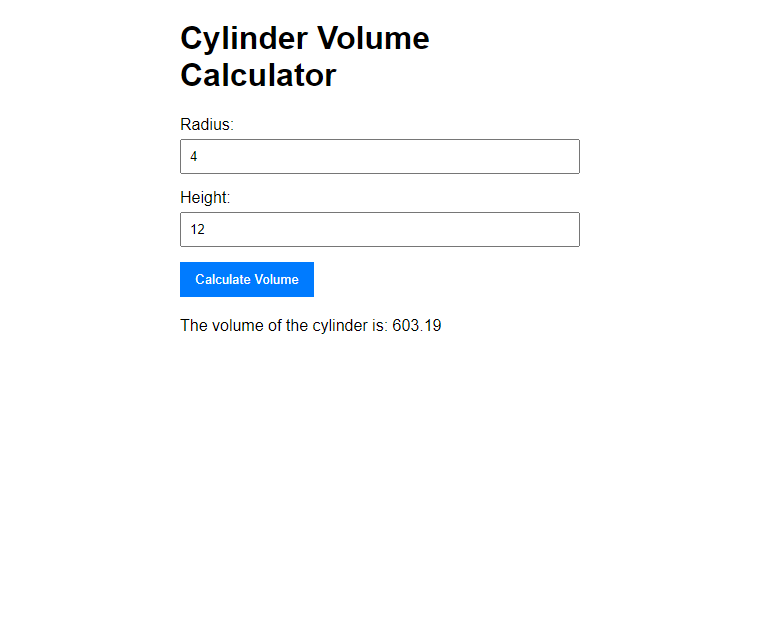
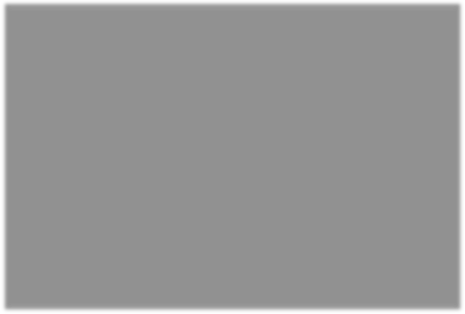
}

</script>

</body>

</html>

**OUTPUT:**



1. **Write a JavaScript program to calculate simple interest. Accept principle amount, rate of interest and number of years from the user. Use function and arrow function to calculate interest.**

**CODE:**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Simple Interest Calculator</title>

</head>

<body>

<div class="container">

<h1>Simple Interest Calculator</h1>

<div class="form-group">

<label for="principal">Principal Amount:</label>

<input type="number" id="principal" step="any" required>

</div>

<div class="form-group">

<label for="rate">Rate of Interest (per annum):</label>

<input type="number" id="rate" step="any" required>

</div>

<div class="form-group">

<label for="years">Number of Years:</label>

<input type="number" id="years" step="any" required>

</div>

<button onclick="calculateInterest()">Calculate Interest</button>

<div class="result">

<p id="interestResult"></p>

</div>

</div>

<script>

// Function to calculate simple interest

function calculateSimpleInterest(principal, rate, years) { return (principal \* rate \* years) / 100;

}

// Arrow function to calculate simple interest

const calculateSimpleInterestArrow = (principal, rate, years) => (principal \* rate \* years) / 100;

// Function to handle the calculation and display function calculateInterest() {

// Get user input values

const principal = parseFloat(document.getElementById('principal').value); const rate = parseFloat(document.getElementById('rate').value);

const years = parseFloat(document.getElementById('years').value);

// Validate input

if (isNaN(principal) || isNaN(rate) || isNaN(years) || principal <= 0 || rate <= 0 || years <= 0) {

document.getElementById('interestResult').innerText = "Invalid input. Please enter positive numbers for all fields.";

return;

}

// Calculate the interest using both functions

const interest = calculateSimpleInterest(principal, rate, years);

const interestArrow = calculateSimpleInterestArrow(principal, rate, years);

// Display the result

document.getElementById('interestResult').innerText = `The simple interest is:

${interest.toFixed(2)} (calculated with both functions: ${interestArrow.toFixed(2)})`;

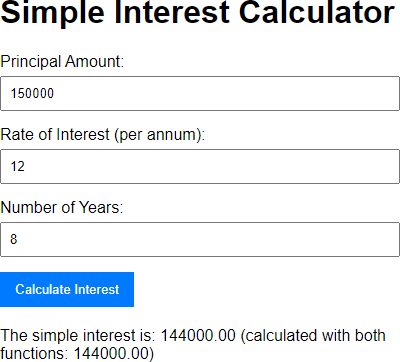
}

</script>

</body>

</html>

**OUTPUT:**



**CONCLUSION: Hence, we have successfully implemented a JavaScript program to calculate volume of cylinder and simple interest.**