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| Name | TC – 1: Inputting into calculator. |
| Requirement | FR – 1: Input numbers and symbols. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Click or type the desired number or symbol that the calculator can take. 2. The user continues to enter in numbers and symbols until they decide to stop. |
| Expected Results | The calculator displays the numbers or symbols that user selected. |

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| Name | TC – 2: Performing basic math functions. |
| Requirement | FR – 2: Perform addition, subtraction, multiplication, and division. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Enter in numbers 2. Enter in the addition, subtraction, multiplication, or division button. 3. Enter in numbers 4. Select the Enter or = key. 5. Verify that the calculator has displayed the correct result. 6. Repeat steps 1 – 3 until all 4 functions have been tested. |
| Expected Results | The calculator displays the correct answer of the problem entered into the calculator. |

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| Name | TC – 3: Performing trigonometry. |
| Requirement | FR – 3: Perform sine, cosine, and tangent. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Click the sin, cos, or tan button. 2. Enter in number or numbers. 3. Click the Enter or = button. 4. Verify that the calculator has displayed the correct result. 5. Repeat steps 1 – 4 until all three functions have been tested. |
| Expected Results | The calculator displays the correct answer of the problem entered into the calculator. |

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| Name | TC – 4: Performing standard and natural log functions. |
| Requirement | FR – 4: Perform standard and natural log functions. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Click the ln or log button. 2. Enter in number or numbers. 3. Click the Enter or = button. 4. Verify that the calculator had displayed the correct result. 5. Repeat steps 1 – 4 until both functions have been tested. |
| Expected Results | The calculator displays the correct answer of the problem entered into the calculator. |

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| Name | TC – 5: Calculating molar mass |
| Requirement | FR – 5: Calculate molar mass of a compound |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Select the chemistry button on the calculator 2. On the drop down menu, select molar mass. 3. Type in the atomic mass of the elements you have selected in the boxes. 4. If there is more than one of a specific element, enter the quantity in the box next to its atomic mass. 5. Click the Enter or = button. 6. Verify that the calculator has displayed the correct answer and unit or measure (g/mol). |
| Expected Results | 1. The calculator displays the correct molar mass and unit of measurement. 2. The molar mass window closes. |

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| Name | TC – 6: Calculating molecular weight. |
| Requirement | FR – 6: Calculate molecular weight of a compound. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Select the chemistry button on the calculator 2. On the drop down menu, select molecular weight. 3. Type in the atomic mass of the elements you have selected in the boxed. 4. If there is more than one of a specific element, enter the quantity in the box next to its atomic mass. 5. Click the Enter or = button. 6. Verify that the calculator has displayed the correct answer and the unit of measure (amu) |
| Expected Results | 1. The calculator displays the correct molecular weight and unit of measurement. 2. The molecular weight window closes. |

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| Name | TC – 7: Opening the periodic table. |
| Requirement | FR – 9: Open periodic table. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Select the chemistry button on the calculator. 2. On the drop down menu, select periodic table. 3. Verify that the periodic table has opened. |
| Expected Results | The calculator displays the periodic table |

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| Name | TC – 8: Using the periodic table |
| Requirement | FR – 7: Read a comma separated file. FR – 10: Look up elements on periodic table. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Select the chemistry button on the calculator. 2. On the drop down menu, select periodic table. 3. Select the chemistry button once again. 4. On the drop down menu select molar mass or molecular weight. 5. Select an element from the periodic table by clicking on it. 6. Once the window containing the information of an element opens, select the atomic mass of the element. 7. Verify that the atomic mass has been transferred to the molar mass or molecular weight window. 8. Repeat steps 1 – 7 until both functions have been tested. |
| Expected Results | The calculator displays the selected elements information into the molar mass or molecular weight window. |

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| Name | TC – 9: Resetting the calculator. |
| Requirement | FR – 11: Reset the calculator. |
| Preconditions | The system displays the primary calculator screen. |
| Steps | 1. Enter in a number or a symbol that the calculator can read. 2. Click the Clear button. 3. Verify that the numbers or symbols entered in have clear off of the calculator screen. |
| Expected Results | The calculator clears the display screen of any numbers on it. |