Boundary Value Testing method:

|  |  |
| --- | --- |
| **Test Case ID** | **1** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Quartic Equation |
| Test Case Input Method | Text - Image |
| Test Case Input | 2x4 – 2x3 – 14x2 + 2x + 12 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -2, x = -1, x = 1, x = 3 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **2** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Cubic Equation |
| Test Case Input Method | Text - Image |
| Test Case Input | x3 – 1 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = 1, x = −1/2 + (sqrt (3)/2)i, x = −1/2 - (sqrt (3)/2)i |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **3** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Quadratic Equation |
| Test Case Input Method | Text - Image |
| Test Case Input | x2 – 25 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = 5, x = -5 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **4** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Quartic Equation |
| Test Case Input Method | Text - Image |
| Test Case Input | x4 – 4x2 + 4 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -sqrt (2), x = sqrt (2) |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **5** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Quadratic Equation |
| Test Case Input Method | Text - Image |
| Test Case Input | 2x2 + 3x + 1 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -1/2, x = -1 |
| Actual Result |  |
| Test Case Result | Pass |

#### Test Results Summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Photo Math** | **Exponential and Logarithmic** | | **Linear Equations** | **Quadratic Equations** | **Polynomial Equations** |
|  | Image | Text |  |  | Text - Image |
| Pass rate | 7/10 | 10/10 |  |  | 5/5 |
| Pass Percentage | 70% | 100% |  |  | 100% |

Category Partition Based Testing:

|  |  |
| --- | --- |
| **Test Case ID** | **1** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Non-mathematical problem |
| Test Case Input Method | Text - Image |
| Test Case Input | Username + Password = Access |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | Error |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **2** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Figurative |
| Test Case Input Method | Text - Image |
| Test Case Input | (x2 - 7x + 11)x2 – 13x + 42 = 1 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = 2, x = 3, x = 4, x = 5, x = 6, x = 7 |
| Actual Result |  |
| Test Case Result | Fail (It gives only four solutions) |

|  |  |
| --- | --- |
| **Test Case ID** | **3** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Word problem |
| Test Case Input Method | Text - Image |
| Test Case Input | Find the value of a, if x – a is a factor of x3 – ax2 + 2x + a – 1 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | a = 1/3 |
| Actual Result |  |
| Test Case Result | Fail |

|  |  |
| --- | --- |
| **Test Case ID** | **4** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Low clarity question |
| Test Case Input Method | Text - Image |
| Test Case Input |  |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -3, x = 2 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **5** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | High clarity question |
| Test Case Input Method | Text - Image |
| Test Case Input |  |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -3, x = 2 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **6** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Complex coefficient equation |
| Test Case Input Method | Text - Image |
| Test Case Input | (42+42i)x2 + (7+i)x + 15i + 5 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = (-7-i+sqrt (1728 – 3346i)) / 2(42 + 42i), x = (-7-i-sqrt (1728 – 3346i)) / 2(42 + 42i) |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **7** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Exponential coefficient equation |
| Test Case Input Method | Text - Image |
| Test Case Input | e3x4 + e2x3 - ex2 + 7 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -1 |
| Actual Result |  |
| Test Case Result | Fail |

|  |  |
| --- | --- |
| **Test Case ID** | **8** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Fractional coefficient equation |
| Test Case Input Method | Text - Image |
| Test Case Input | (1/2)x2 + (1/2)x – 10 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -5, x = 4 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **9** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Rational coefficient equation |
| Test Case Input Method | Text - Image |
| Test Case Input | 4x4 – 8x3 – 3x2 + 5x + 2 = 0 |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -1/2, x = 1, x = 2 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Photo Math** | **Exponential and Logarithmic** | **Linear Equations** | **Quadratic Equations** | **Polynomial Equations** |
|  | Image |  |  | Text - Image |
| Pass rate | 9/13 |  |  | 6/9 |
| Pass Percentage | 69.2% |  |  | 66.66% |

Scenario Based Testing:

|  |  |
| --- | --- |
| **Test Case ID** | **1** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Bad light equation |
| Test Case Input Method | Text - Image |
| Test Case Input |  |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -2, x = -1, x = 1, x = 3 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **2** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Good light equation |
| Test Case Input Method | Text - Image |
| Test Case Input |  |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -2, x = -1, x = 1, x = 3 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |
| --- | --- |
| **Test Case ID** | **3** |
| Test Topic | Algebra (Polynomial Equations) |
| Test Description | Gallery Upload |
| Test Case Input Method | Text - Image |
| Test Case Input |  |
| Performed By | Harish Marepalli |
| Execution Date | 27th September 2023 |
| Expected Result | x = -2, x = -1, x = 1, x = 3 |
| Actual Result |  |
| Test Case Result | Pass |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Photo Math** | **Exponential and Logarithmic** | **Linear Equations** | **Quadratic Equations** | **Polynomial Equations** |
|  |  |  |  | Text - Image |
| Pass rate |  |  |  | 3/3 |
| Pass Percentage |  |  |  | 100% |