System Test Plan for ShapeCalculator

The text in bold in the **Description** column represents the test inputs to the program. You can stop program execution by pressing Ctrl+C.

Test ID	Description	Expected Results	Actual Results
testSphereVolume Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **S** Option (S-Surface Area, V-Volume): **v** Radius: **10**	4188.79 Program Exits	4188.79 Program Exits
testCylinderSurface Area Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **Y** Option (S-Surface Area, V-Volume): **s** Radius: **12** Height: **23**	2638.94 Program Exits	2638.94 Program Exits
testCubeSurfaceAr ea Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **S** Side length: **7**	294.00 Program Exits	294.00 Program Exits

testSphereSurface Area Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **s** Radius: **3**	113.10 Program Exits	113.10 Program Exits
testInvalidShapeW ord Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **cube**	Invalid shape Program Exits	Invalid shape Program Exits
testInvalidShapeLe tter Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **x**	Invalid shape Program Exits	Invalid shape Program Exits
testCubeInvalidOpt ionLetter Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **A**	Invalid option Program Exits	Invalid option Program Exits

testCylinderSurfaceAreaRadiusInvalidAtBoundary Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **s** Radius: **0**	Invalid value Program Exits	Invalid value Program Exits
testCylinderVolumeHeightInvalidNotAtBoundary Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **Y** Option (S-Surface Area, V-Volume): **v** Radius: **3** Height: **-4**	Invalid value Program Exits	Invalid value Program Exits
testCylinderSurfaceAreaHeightInvalidAtBoundary Author: Dr. Balik	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **s** Radius: **3** Height: **0**	Invalid value Program Exits	Invalid value Program Exits

testCylinderVolumeRadiusInvalidAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **V** Radius: **0**	Invalid value Program Exits	Invalid value Program Exits
testCylinderSurfaceAreaHeightInvalidNotAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **S** Radius: **3** Height: **-4**	Invalid value Program Exits	Invalid value Program Exits
testCylinderVolumeHeightInvalidAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **Y** Option (S-Surface Area, V-Volume): **v** Radius: **3** Height: **0**	Invalid value Program Exits	Invalid value Program Exits

testCylinderSurface AreaRadiusandHeig htValidAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **s** Radius: **1** Height: **1**	12.57 Program Exits	12.57 Program Exits
testCylinderVolum eRadiusandHeightV alidAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **v** Radius: **1** Height: **1**	3.14 Program Exits	3.14 Program Exits
testCylinderVolum eRadiusAndHeight ValidNotAtBoundar y Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **y** Option (S-Surface Area, V-Volume): **v** Radius: **25** Height: **50**	98174.77 Program Exits	98174.77 Program Exits

testCubeVolumeSideLengthValidNotAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **v** Side length: **7**	343.00 Program Exits	343.00 Program Exits
testCylinderVolumeRadiusInvalidNotAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere):**y** Option (S-Surface Area, V-Volume): **V** Radius: **-10**	Invalid value Program Exits	Invalid value Program Exits
testCylinderSurfaceAreaRadiusInvalidNotAtBoundary Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere):**Y** Option (S-Surface Area, V-Volume): **s** Radius: **-10**	Invalid value Program Exits	Invalid value Program Exits
testCubeInvalidOptionWord Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **C** Option (S-Surface Area, V-Volume): S**urface**	Invalid option Program Exits	Invalid option Program Exits

testSphereInvalidOptionWord Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **Volume**	Invalid option Program Exits	Invalid option Program Exits
testCylunderInvalidOptionWord Author: Mrs. Glatz	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **SA**	Invalid option Program Exits	Invalid option Program Exits
testCubeVolumeSideLengthInvalidAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **v** Side length: **-1**	Invalid value Program Exits	Invalid value Program Exits
testCubeVolumeSideLengthValidAtBoundary	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **v**	1.00 Program Exits	1.00 Program Exits

Author: Rabin Paudel	Side length: **1**		
testCubeVolumeSideLengthInvalidNotAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **v** Side length: **5**	125.00 Program Exits	125.00 Program Exits
testCubeSurfaceAreaSideLengthInvalidAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **s** Side length: -**1**	Invalid value Program Exits	Invalid value Program Exits
testCubeSurfaceAreaSideLengthValidAtBoundary	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **s**	6.00 Program Exits	6.00 Program Exits

Author: Rabin Paudel	Side length: 1		
testCubeSurfaceAreaSideLengthInvalidNotAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **c** Option (S-Surface Area, V-Volume): **S** Side length: -5	Invalid value Program Exits	Invalid value Program Exits
testSphereVolumeRadiusInvalidAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **v** Radius: -1	Invalid value Program Exits	Invalid value Program Exits

testSphereVolumeRadiusInvalidNotAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **v** Radius: -5	Invalid value Program Exits	Invalid value Program Exits
testSphereVolumeRadiusValidAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **v** Radius: 1	4.19 Program Exits	4.19 Program Exits
testSphereSurfaceAreaRadiusInvalidAtBoundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **s** Radius: -1	Invalid value Program Exits	Invalid value Program Exits
testSphereSurfaceAreaRadiusInvalidNotAtBoundary	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s**	Invalid value Program Exits	Invalid value Program Exits

Author: Rabin Paudel	Option (S-Surface Area, V-Volume): **s** Radius: -5		
testSphereSurface AreaRadiusValidAt Boundary Author: Rabin Paudel	*Preconditions:* ShapeCalculator program started Shape (C-Cube, Y-Cylinder, S-Sphere): **s** Option (S-Surface Area, V-Volume): **s** Radius: 1	12.57 Program Exits	12.57 Program Exits