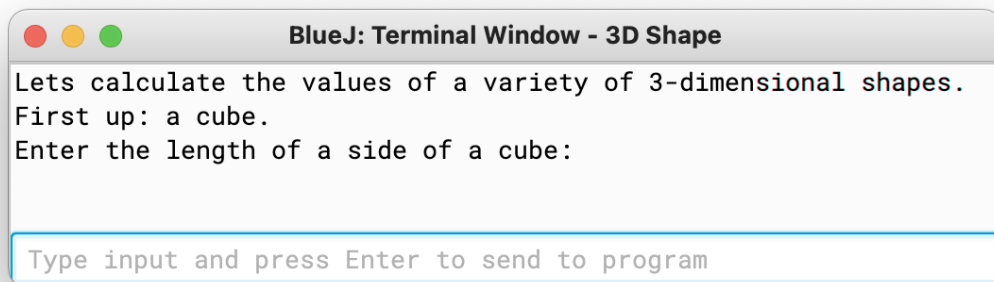


## 3D Shapes Test Exhibits

Program start-up:



Test exhibit for negative and boundary values:

```
BlueJ: Terminal Window - 3D Shape

Lets calculate the values of a variety of 3-dimensional shapes.
First up: a cube.
Enter the length of a side of a cube: -1
Please choose a value greater than or equal to zero:
Re-enter the length of a side of a cube: 0

Next up: a rectangle.
Enter the height: -1
Please choose a value greater than or equal to zero.
Re-enter the height: 0
Enter the width: -1
Please choose a value greater than or equal to zero.
Re-enter the width: 0
Enter the depth: -1
Please choose a value greater than or equal to zero.
Re-enter the depth: 0

Next up: a sphere.
Enter the radius: -1
Please choose a value greater than or equal to zero.
Re-enter the radius: 0

Lastly: a cylinder.
Enter the radius: -1
Please choose a value greater than or equal to zero.
Re-enter the radius: 0
Enter the height: -1
Please choose a value greater than or equal to zero.
Re-enter the height: 0

Some information about the given shapes is as follows:

Shape type: cube
Sides: 4
Side length: 0.0
Volume: 0.0
Surface Area: 0.0

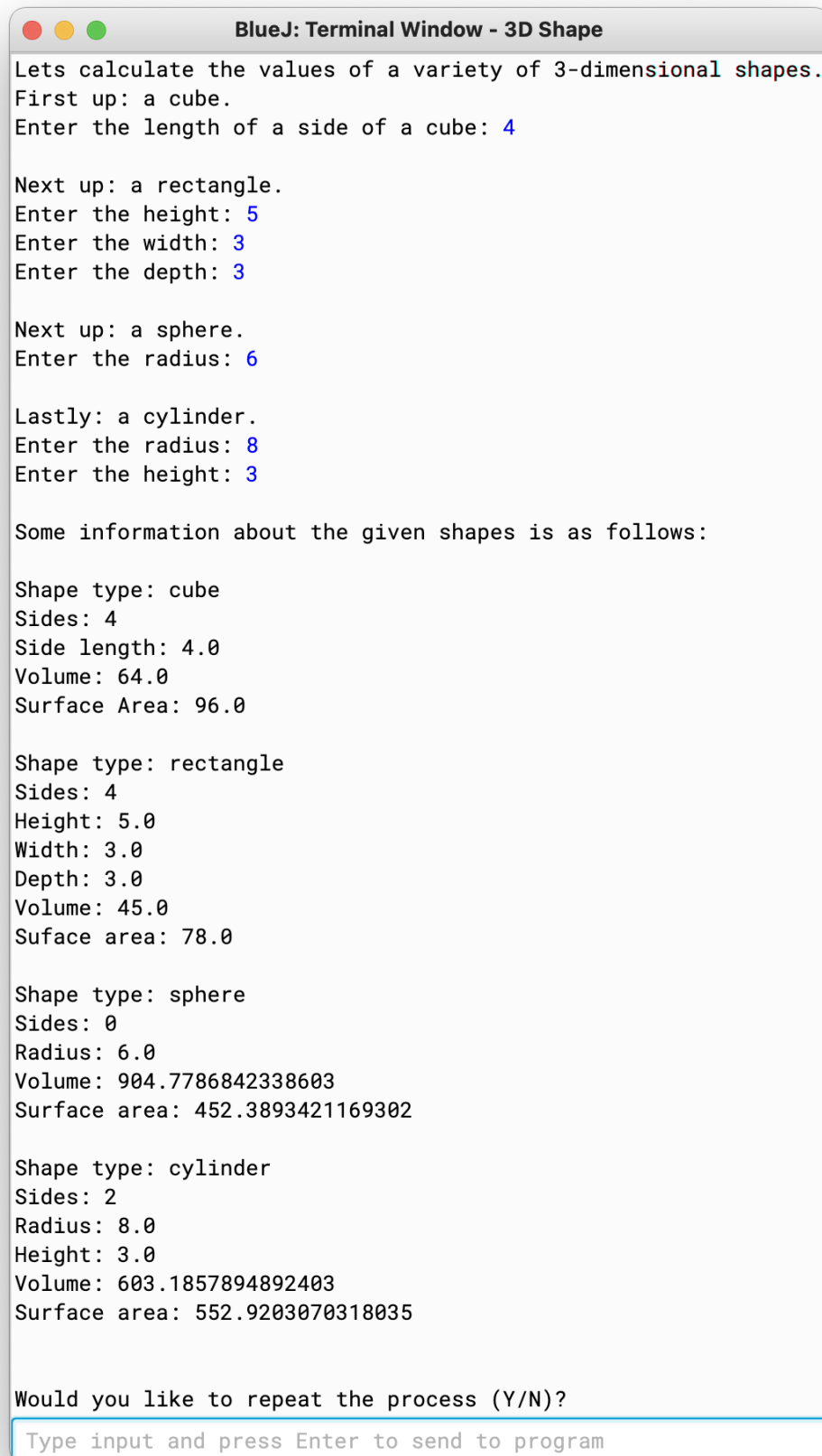
Shape type: rectangle
Sides: 4
Height: 0.0
Width: 0.0
Depth: 0.0
Volume : 0.0
Surface area: 0.0

Shape type: sphere
Sides: 0
Radius: 0.0
Volume: 0.0
Surface area: 0.0

Shape type: cylinder
Sides: 2
Radius: 0.0
Height: 0.0
Volume: 0.0
Surface area: 0.0

Type input and press Enter to send to program
```

Test Exhibit for integers:



```
BlueJ: Terminal Window - 3D Shape

Lets calculate the values of a variety of 3-dimensional shapes.
First up: a cube.
Enter the length of a side of a cube: 4

Next up: a rectangle.
Enter the height: 5
Enter the width: 3
Enter the depth: 3

Next up: a sphere.
Enter the radius: 6

Lastly: a cylinder.
Enter the radius: 8
Enter the height: 3

Some information about the given shapes is as follows:

Shape type: cube
Sides: 4
Side length: 4.0
Volume: 64.0
Surface Area: 96.0

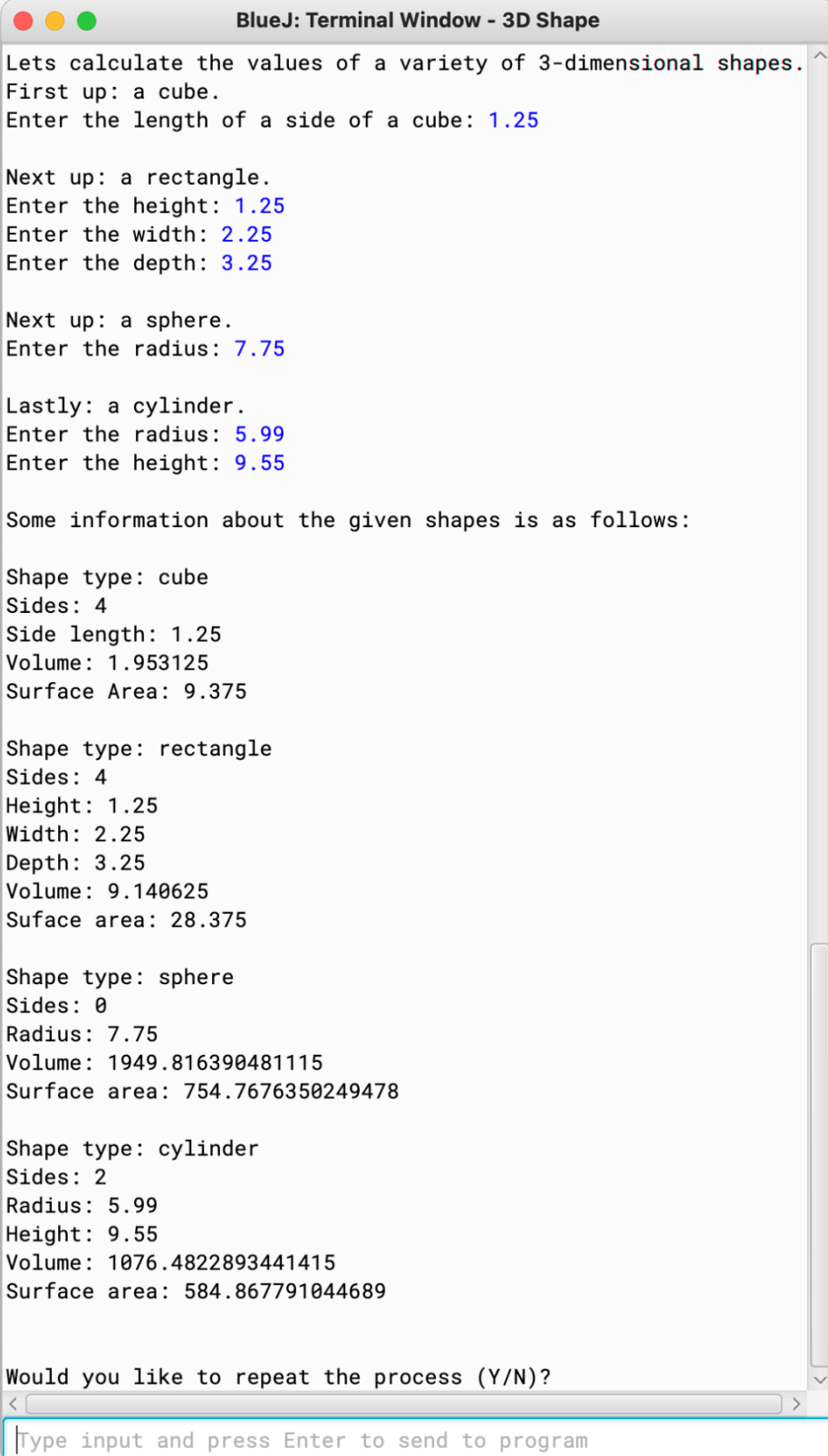
Shape type: rectangle
Sides: 4
Height: 5.0
Width: 3.0
Depth: 3.0
Volume: 45.0
Surface area: 78.0

Shape type: sphere
Sides: 0
Radius: 6.0
Volume: 904.7786842338603
Surface area: 452.3893421169302

Shape type: cylinder
Sides: 2
Radius: 8.0
Height: 3.0
Volume: 603.1857894892403
Surface area: 552.9203070318035

Would you like to repeat the process (Y/N)?
Type input and press Enter to send to program
```

Test Exhibit 2 for real numbers:

A screenshot of a BlueJ Terminal Window titled "BlueJ: Terminal Window - 3D Shape". The window contains a Java program that calculates the volume and surface area of various 3D shapes. The program prompts the user to enter dimensions for a cube, a rectangle, a sphere, and a cylinder. The user's inputs are shown in blue text. The program then outputs the calculated values for each shape. At the bottom, it asks if the user wants to repeat the process.

```
BlueJ: Terminal Window - 3D Shape

Lets calculate the values of a variety of 3-dimensional shapes.
First up: a cube.
Enter the length of a side of a cube: 1.25

Next up: a rectangle.
Enter the height: 1.25
Enter the width: 2.25
Enter the depth: 3.25

Next up: a sphere.
Enter the radius: 7.75

Lastly: a cylinder.
Enter the radius: 5.99
Enter the height: 9.55

Some information about the given shapes is as follows:

Shape type: cube
Sides: 4
Side length: 1.25
Volume: 1.953125
Surface Area: 9.375

Shape type: rectangle
Sides: 4
Height: 1.25
Width: 2.25
Depth: 3.25
Volume: 9.140625
Surface area: 28.375

Shape type: sphere
Sides: 0
Radius: 7.75
Volume: 1949.816390481115
Surface area: 754.7676350249478

Shape type: cylinder
Sides: 2
Radius: 5.99
Height: 9.55
Volume: 1076.4822893441415
Surface area: 584.867791044689

Would you like to repeat the process (Y/N)?
Type input and press Enter to send to program
```