Trapezoid Rule Integration using MPI

MPI is implemented to integrate the function outlined by the question using the clusters housed in the Dirac Science library. The subintervals of the integration are equal to the number of processors one designates for the computation. When the trapezoid program is used to integrate the function over 10 processors it computes the following results:

```
-bash-4.2$ mpirun -np 10 trapezoid
 Area found in processor 7 = 77.2812
 Area found in processor 3 = 43.2913
 Area found in processor 9 = 31.2763
 Area found in processor 2 = 26.0438
 Area found in processor 5 = 73.2862
 Area found in processor 1 = 11.2963
 Area found in processor 8 = 62.0288
 Area found in processor 6 = 80.0338
 Area found in processor 4 = 60.0387
 Area found in processor 0 = 2.04875

 Trapezoidal Rule Total Area = 466.625
```

The function is split into segments and then sent numerically to each processor. The clusters do not necessarily finish their computations in numerical order. Using the plot of the function outlined in the question, one can see how the area slowly rises from processor 0 to processor 8 the area covered by each interval increases, only to decrease in processor 9. This roughly matches the plot of the outlined function. The total area calculated using 10 processors is 466.625. If more processors were used to integrate the function the calculated area would be more precise.