Hermite Integration using MPI

The code for integrating the function **f(x) = x + 5(x^2) – 0.5(x^3)** can be found in HERMITE.cpp. The code uses a cubic Hermite spline to calculate the area under the curve. Q8 asks for f(x) to be divided into 10 subintervals per node, however if a user wants the program can work with any number of nodes.

Command line results for HERMITE

```
bash-4.2$ mpirun -np 10 HERMITE
Area found in processor 9 = 36.125
Area found in processor 8 = 63.875
Area found in processor 7 = 78.625
Area found in processor 1 = 9.625
Area found in processor 6 = 80.875
Area found in processor 5 = 73.625
Area found in processor 4 = 59.875
Area found in processor 3 = 42.625
Area found in processor 0 = 3.625
Area found in processor 2 = 24.875

 Hermite Total Area = 473.75
bash-4.2$
```

In order:

```
Area found in processor 9 = 36.125
Area found in processor 8 = 63.875
Area found in processor 7 = 78.625
Area found in processor 6 = 80.875
Area found in processor 5 = 73.625
Area found in processor 4 = 59.875
Area found in processor 3 = 42.625
Area found in processor 2 = 24.875
Area found in processor 1 = 9.625
Area found in processor 0 = 3.625

Hermite Total Area = 473.75
```