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%Homework 4/10 Thermal Properties of a Bomb Calorimeter

%Heat capacity of water, steel, and aluminum. This is a 1x3 matrix
heatcapacity=[4.2 0.45 0.9];

%The masses of water, steel, and aluminum.
masswater=[110 100 101 98.6 99.4];
masssteel=[250 250 250 250 250];
massaluminum=[10 10 10 10 10];

%Matrix for all of the masses. This is a 3x5 matrix
allmass=[masswater; masssteel; massaluminum];

%Now to find the total heat capacity for each trial, I use matrix
%multiplication. It must be heatcapacity*allmass in order for the
 inner
%matrix dimensions to agree
totalheat=[heatcapacity*allmass];

%I create a vector for the trials
trials=[1 2 3 4 5];

%Now I create a matrix with both the trials and the total heat
table=[trials; totalheat];

%Now, using the fprintf function, I can create a table that shows the
 total heat
%capacity for each trial
fprintf('Trial # Total Heat Capacity\n')
fprintf('%5.2f %9.2f\n', table)
```

```
Trial # Total Heat Capacity
 1.00    583.50
 2.00    541.50
 3.00    545.70
 4.00    535.62
 5.00    538.98
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