Answer on Question #45565, Engineering, Other

Question:

write separate functions arithmetic_mean(), rms_average(), harmonic_mean(), geometric_mean() which takes the data array as the argument and compute the respective quantities. Write a script averages which take two values xlow and xhigh and generate 10000 random numbers in the range [xlow…xhigh], and calls the appropriate functions to compute arithmetic mean (average), rms average, geometric mean and harmonic mean.

Answer:

File “arithmetic_mean.m”:

```
function [arithmetic_mean_value] = arithmetic_mean (array)

arithmetic_mean_value = mean(array);

end
```

File “rms_average.m”:

```
function [rms_average_value] = rms_average (array)

rms_average_value = rms(array);

end
```

File “harmonic_mean.m”:

```
function [harmonic_mean_value] = harmonic_mean (array)

harmonic_mean_value = geomean(array);

end
```

File “geometric_mean.m”:

```
function [geometric_mean_value] = geometric_mean (array)

geometric_mean_value = geomean(array);

end
```

File “averages.m”:

```
function [] = averages (xlow, xhigh)
   random_array = random('unif', xlow, xhigh, 10000, 1);
   average_value = arithmetic_mean(random_array)
   rms_value = rms_average(random_array)
   geometric_mean_value = geometric_mean(random_array)
   harmonic_mean_value = harmonic_mean(random_array)
end
```