

```

% Time vector for input rf volt and drift
t1 = 0:0.00001:0.008;

% RF characteristics
A1 = 1; % Amplitude 1
f1 = 1 / 0.002; % Frequency: 1 cycle in 0.002 sec
omega1 = 2 * pi * f1;

% drift characteristics
A2 = 0.2; % Amplitude 0.02
f2 = 1 / 0.008; % Frequency: 1 cycle in 0.008 sec
omega2 = 2 * pi * f2;

% modulating rf voltage
Vin = A1 * sin(omega1 * t1);

% drift voltage
Vdrift = A2 * sin(omega2 * t1);

%Powerbytwo=0.2 assuming power =0.4W
A = (0.2+0.2*sin((pi*Vin)/2 +Vdrift))

```

```

A = 1×801
    0.2000    0.2102    0.2203    0.2304    0.2404    0.2502    0.2598    0.2693 ...

```

```

B = (0.2-0.2*sin((pi*Vin)/2 +Vdrift))

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```

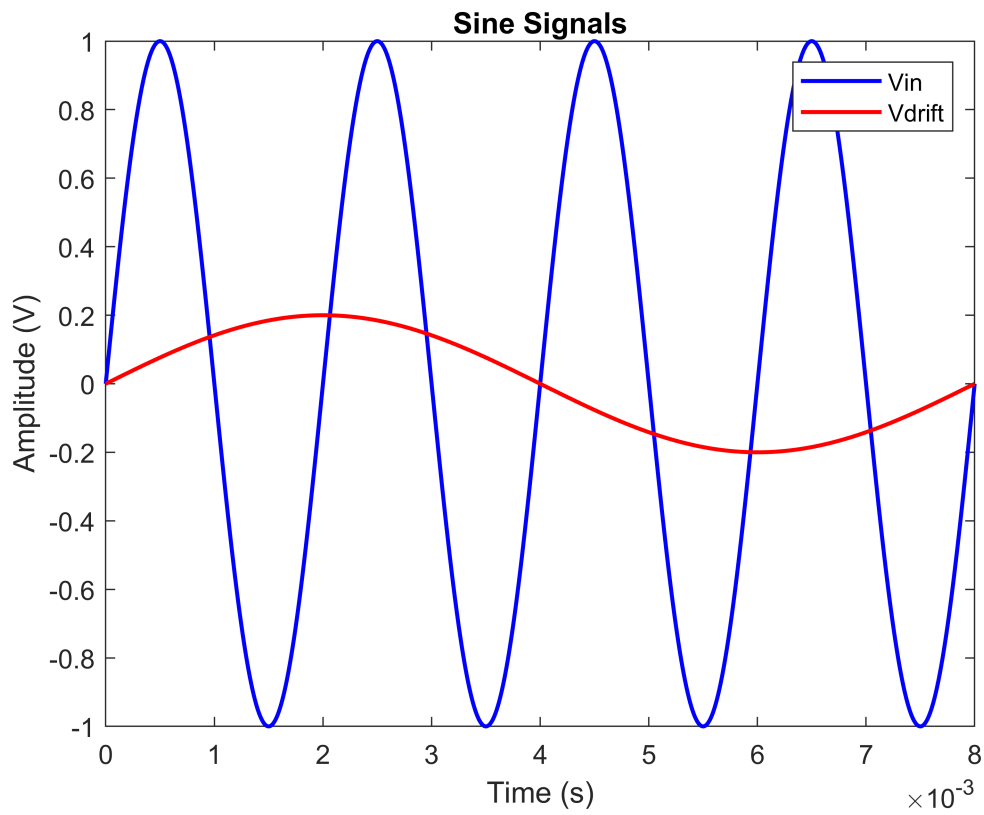
B = 1×801
    0.2000    0.1898    0.1797    0.1696    0.1596    0.1498    0.1402    0.1307 ...

```

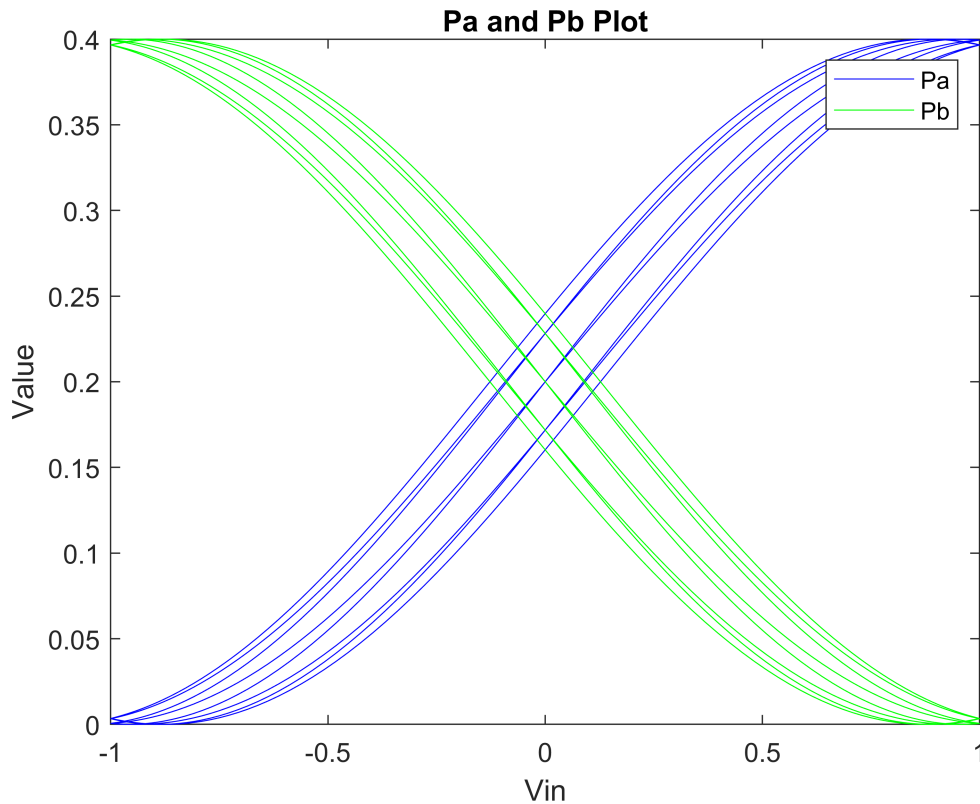
```

% Plotting the signals
plot(t1, Vin, 'b', 'LineWidth', 1.5);hold on;
plot(t1, Vdrift, 'r', 'LineWidth', 1.5);hold off;
title('Sine Signals');xlabel('Time (s)');ylabel('Amplitude (V)');legend('Vin', 'Vdrift');

```



```
% Plot A and B
plot(Vin, A, 'b', 'LineWidth', 0.4);hold on;
plot(Vin, B, 'g', 'LineWidth', 0.4);hold off;
title('Pa and Pb Plot');xlabel('Vin');ylabel('Value');legend('Pa', 'Pb');
```



```
% Define the equations as a function
equations = @(x, A, B) [0.2 + 0.2*sin((pi/2)*x(1) + x(2)) - A; 0.2 - 0.2*sin((pi/2)*x(1) + x(2)) - B];

% initial guesses for Vin and Drift
initialGuess = [0;0];

% Array of values for A and B
A_values = A;
B_values = B;

% Initialize arrays to store Vin and Vdrift values
Vin_values = zeros(801, 1);
Drift_values = zeros(801, 1);

% Run the loop for different values of A and B
for i = 1:801
    % Retrieve values for A and B from the arrays
    A = A_values(i);
    B = B_values(i);

    lb=[-1;-0.2]; %lowerbound
    ub=[1;0.2]; %upperbound
    % solve the system using lsqnonlin
    solution = lsqnonlin(@(x) equations(x, A, B), initialGuess, lb, ub);

    % Extract the values of V and D from the solution
    Vin_values(i) = solution(1);
    Drift_values(i) = solution(2);
end
```

```
Vin_values(i) = solution(1);  
Drift_values(i) = solution(2);  
end
```

Initial point is a local minimum.

Optimization completed because the size of the gradient at the initial point is less than the value of the optimality tolerance.

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Local minimum found.

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lsqnonlin stopped because the final change in the sum of squares relative to its initial value is less than the value of the function tolerance.

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Local minimum found....

```
% Display the results
disp('Vin and Drift values for different combinations of A and B:');
```

Vin and Drift values for different combinations of A and B:

```
disp('---');
```

```
for i = 1:801
    disp(['Combination ' num2str(i) ': Vin = ' num2str(Vin_values(i)) ', Drift = ' num2str(Drift_values(i)) ']);
end
```

```
Combination 1: Vin = 0, Drift = 0
Combination 2: Vin = 0.028749, Drift = 0.0057499
Combination 3: Vin = 0.057473, Drift = 0.011495
Combination 4: Vin = 0.08614, Drift = 0.017228
Combination 5: Vin = 0.11473, Drift = 0.022945
Combination 6: Vin = 0.1432, Drift = 0.02864
Combination 7: Vin = 0.17154, Drift = 0.034307
Combination 8: Vin = 0.19971, Drift = 0.039941
Combination 9: Vin = 0.22769, Drift = 0.045539
Combination 10: Vin = 0.25546, Drift = 0.051092
Combination 11: Vin = 0.28298, Drift = 0.056595
Combination 12: Vin = 0.31023, Drift = 0.062045
Combination 13: Vin = 0.33718, Drift = 0.067435
Combination 14: Vin = 0.3638, Drift = 0.072761
Combination 15: Vin = 0.39008, Drift = 0.078016
Combination 16: Vin = 0.41598, Drift = 0.083196
Combination 17: Vin = 0.4415, Drift = 0.0883
Combination 18: Vin = 0.46658, Drift = 0.093317
Combination 19: Vin = 0.49122, Drift = 0.098244
Combination 20: Vin = 0.51539, Drift = 0.10308
Combination 21: Vin = 0.53907, Drift = 0.10781
Combination 22: Vin = 0.56222, Drift = 0.11244
Combination 23: Vin = 0.58484, Drift = 0.11697
Combination 24: Vin = 0.60688, Drift = 0.12138
Combination 25: Vin = 0.6284, Drift = 0.12568
Combination 26: Vin = 0.64928, Drift = 0.12986
```


Combination 27: Vin = 0.66954, Drift = 0.13391
 Combination 28: Vin = 0.68916, Drift = 0.13783
 Combination 29: Vin = 0.70811, Drift = 0.14162
 Combination 30: Vin = 0.72636, Drift = 0.14527
 Combination 31: Vin = 0.74384, Drift = 0.14877
 Combination 32: Vin = 0.76046, Drift = 0.15209
 Combination 33: Vin = 0.77705, Drift = 0.15541
 Combination 34: Vin = 0.79243, Drift = 0.15849
 Combination 35: Vin = 0.80698, Drift = 0.1614
 Combination 36: Vin = 0.82053, Drift = 0.16411
 Combination 37: Vin = 0.83279, Drift = 0.16656
 Combination 38: Vin = 0.84333, Drift = 0.16867
 Combination 39: Vin = 0.85169, Drift = 0.17034
 Combination 40: Vin = 0.85752, Drift = 0.1715
 Combination 41: Vin = 0.86076, Drift = 0.17215
 Combination 42: Vin = 0.86167, Drift = 0.17233
 Combination 43: Vin = 0.86072, Drift = 0.17214
 Combination 44: Vin = 0.85848, Drift = 0.1717
 Combination 45: Vin = 0.85551, Drift = 0.1711
 Combination 46: Vin = 0.85227, Drift = 0.17045
 Combination 47: Vin = 0.8491, Drift = 0.16982
 Combination 48: Vin = 0.84627, Drift = 0.16925
 Combination 49: Vin = 0.84394, Drift = 0.16879
 Combination 50: Vin = 0.84223, Drift = 0.16845
 Combination 51: Vin = 0.8412, Drift = 0.16824
 Combination 52: Vin = 0.84088, Drift = 0.16818
 Combination 53: Vin = 0.8413, Drift = 0.16826
 Combination 54: Vin = 0.84242, Drift = 0.16848
 Combination 55: Vin = 0.84422, Drift = 0.16884
 Combination 56: Vin = 0.84661, Drift = 0.16932
 Combination 57: Vin = 0.84949, Drift = 0.1699
 Combination 58: Vin = 0.85267, Drift = 0.17053
 Combination 59: Vin = 0.85589, Drift = 0.17118
 Combination 60: Vin = 0.85878, Drift = 0.17176
 Combination 61: Vin = 0.86089, Drift = 0.17218
 Combination 62: Vin = 0.86167, Drift = 0.17233
 Combination 63: Vin = 0.86055, Drift = 0.17211
 Combination 64: Vin = 0.8571, Drift = 0.17142
 Combination 65: Vin = 0.85108, Drift = 0.17022
 Combination 66: Vin = 0.84261, Drift = 0.16852
 Combination 67: Vin = 0.83202, Drift = 0.1664
 Combination 68: Vin = 0.81979, Drift = 0.16396
 Combination 69: Vin = 0.80631, Drift = 0.16126
 Combination 70: Vin = 0.79188, Drift = 0.15838
 Combination 71: Vin = 0.77665, Drift = 0.15533
 Combination 72: Vin = 0.76025, Drift = 0.15205
 Combination 73: Vin = 0.74384, Drift = 0.14877
 Combination 74: Vin = 0.7266, Drift = 0.14532
 Combination 75: Vin = 0.70863, Drift = 0.14173
 Combination 76: Vin = 0.68999, Drift = 0.138
 Combination 77: Vin = 0.67071, Drift = 0.13414
 Combination 78: Vin = 0.65084, Drift = 0.13017
 Combination 79: Vin = 0.63037, Drift = 0.12607
 Combination 80: Vin = 0.60931, Drift = 0.12186
 Combination 81: Vin = 0.58777, Drift = 0.11755
 Combination 82: Vin = 0.5657, Drift = 0.11314
 Combination 83: Vin = 0.54312, Drift = 0.10862
 Combination 84: Vin = 0.52007, Drift = 0.10401
 Combination 85: Vin = 0.49657, Drift = 0.099313
 Combination 86: Vin = 0.47264, Drift = 0.094528
 Combination 87: Vin = 0.44831, Drift = 0.089661
 Combination 88: Vin = 0.42359, Drift = 0.084717
 Combination 89: Vin = 0.39853, Drift = 0.079707
 Combination 90: Vin = 0.37315, Drift = 0.07463

Combination 91: Vin = 0.34747, Drift = 0.069493
 Combination 92: Vin = 0.3215, Drift = 0.064301
 Combination 93: Vin = 0.29529, Drift = 0.059059
 Combination 94: Vin = 0.26886, Drift = 0.053772
 Combination 95: Vin = 0.24223, Drift = 0.048446
 Combination 96: Vin = 0.21543, Drift = 0.043086
 Combination 97: Vin = 0.18849, Drift = 0.037698
 Combination 98: Vin = 0.16144, Drift = 0.032288
 Combination 99: Vin = 0.1343, Drift = 0.026859
 Combination 100: Vin = 0.1071, Drift = 0.021419
 Combination 101: Vin = 0.079863, Drift = 0.015973
 Combination 102: Vin = 0.052625, Drift = 0.010525
 Combination 103: Vin = 0.025409, Drift = 0.0050817
 Combination 104: Vin = -0.0017538, Drift = -0.00035075
 Combination 105: Vin = -0.028845, Drift = -0.0057689
 Combination 106: Vin = -0.055829, Drift = -0.011166
 Combination 107: Vin = -0.082681, Drift = -0.016536
 Combination 108: Vin = -0.10937, Drift = -0.021875
 Combination 109: Vin = -0.13588, Drift = -0.027176
 Combination 110: Vin = -0.16218, Drift = -0.032435
 Combination 111: Vin = -0.18823, Drift = -0.037646
 Combination 112: Vin = -0.21402, Drift = -0.042805
 Combination 113: Vin = -0.23952, Drift = -0.047905
 Combination 114: Vin = -0.26471, Drift = -0.052941
 Combination 115: Vin = -0.28955, Drift = -0.057909
 Combination 116: Vin = -0.31402, Drift = -0.062804
 Combination 117: Vin = -0.3381, Drift = -0.06762
 Combination 118: Vin = -0.36176, Drift = -0.072353
 Combination 119: Vin = -0.38499, Drift = -0.076997
 Combination 120: Vin = -0.40774, Drift = -0.081549
 Combination 121: Vin = -0.43001, Drift = -0.086001
 Combination 122: Vin = -0.45179, Drift = -0.090358
 Combination 123: Vin = -0.47303, Drift = -0.094605
 Combination 124: Vin = -0.49371, Drift = -0.098742
 Combination 125: Vin = -0.51382, Drift = -0.10276
 Combination 126: Vin = -0.53333, Drift = -0.10667
 Combination 127: Vin = -0.55223, Drift = -0.11045
 Combination 128: Vin = -0.5705, Drift = -0.1141
 Combination 129: Vin = -0.58811, Drift = -0.11762
 Combination 130: Vin = -0.60505, Drift = -0.12101
 Combination 131: Vin = -0.62128, Drift = -0.12426
 Combination 132: Vin = -0.63691, Drift = -0.12738
 Combination 133: Vin = -0.65175, Drift = -0.13035
 Combination 134: Vin = -0.66586, Drift = -0.13317
 Combination 135: Vin = -0.67922, Drift = -0.13584
 Combination 136: Vin = -0.69182, Drift = -0.13836
 Combination 137: Vin = -0.70365, Drift = -0.14073
 Combination 138: Vin = -0.71468, Drift = -0.14294
 Combination 139: Vin = -0.7249, Drift = -0.14498
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 Combination 205: Vin = 0.22407, Drift = 0.044813
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Combination 219: Vin = 0.58711, Drift = 0.11742
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 Combination 242: Vin = 0.81483, Drift = 0.16297
 Combination 243: Vin = 0.8079, Drift = 0.16158
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 Combination 263: Vin = 0.84573, Drift = 0.16915
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 Combination 298: Vin = 0.1652, Drift = 0.03304
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 Combination 523: Vin = -0.65784, Drift = -0.13157
 Combination 524: Vin = -0.67953, Drift = -0.13591
 Combination 525: Vin = -0.70063, Drift = -0.14013
 Combination 526: Vin = -0.72111, Drift = -0.14422
 Combination 527: Vin = -0.74089, Drift = -0.14818
 Combination 528: Vin = -0.75986, Drift = -0.15197
 Combination 529: Vin = -0.77884, Drift = -0.15577
 Combination 530: Vin = -0.79669, Drift = -0.15934
 Combination 531: Vin = -0.81366, Drift = -0.16273
 Combination 532: Vin = -0.8294, Drift = -0.16588
 Combination 533: Vin = -0.84311, Drift = -0.16862
 Combination 534: Vin = -0.85366, Drift = -0.17073
 Combination 535: Vin = -0.85999, Drift = -0.172
 Combination 536: Vin = -0.86163, Drift = -0.17233
 Combination 537: Vin = -0.85904, Drift = -0.17181
 Combination 538: Vin = -0.85332, Drift = -0.17066

Combination 539: Vin = -0.84573, Drift = -0.16915
 Combination 540: Vin = -0.83733, Drift = -0.16747
 Combination 541: Vin = -0.82885, Drift = -0.16577
 Combination 542: Vin = -0.82074, Drift = -0.16415
 Combination 543: Vin = -0.81323, Drift = -0.16265
 Combination 544: Vin = -0.80646, Drift = -0.16129
 Combination 545: Vin = -0.80049, Drift = -0.1601
 Combination 546: Vin = -0.79536, Drift = -0.15907
 Combination 547: Vin = -0.79108, Drift = -0.15822
 Combination 548: Vin = -0.78767, Drift = -0.15753
 Combination 549: Vin = -0.78513, Drift = -0.15703
 Combination 550: Vin = -0.78347, Drift = -0.15669
 Combination 551: Vin = -0.78269, Drift = -0.15654
 Combination 552: Vin = -0.7828, Drift = -0.15656
 Combination 553: Vin = -0.78378, Drift = -0.15676
 Combination 554: Vin = -0.78564, Drift = -0.15713
 Combination 555: Vin = -0.78837, Drift = -0.15767
 Combination 556: Vin = -0.79198, Drift = -0.1584
 Combination 557: Vin = -0.79644, Drift = -0.15929
 Combination 558: Vin = -0.80176, Drift = -0.16035
 Combination 559: Vin = -0.8079, Drift = -0.16158
 Combination 560: Vin = -0.81483, Drift = -0.16297
 Combination 561: Vin = -0.82247, Drift = -0.16449
 Combination 562: Vin = -0.83067, Drift = -0.16613
 Combination 563: Vin = -0.83916, Drift = -0.16783
 Combination 564: Vin = -0.84743, Drift = -0.16949
 Combination 565: Vin = -0.85471, Drift = -0.17094
 Combination 566: Vin = -0.85987, Drift = -0.17197
 Combination 567: Vin = -0.86166, Drift = -0.17233
 Combination 568: Vin = -0.85911, Drift = -0.17182
 Combination 569: Vin = -0.85194, Drift = -0.17039
 Combination 570: Vin = -0.84074, Drift = -0.16815
 Combination 571: Vin = -0.82664, Drift = -0.16533
 Combination 572: Vin = -0.81072, Drift = -0.16214
 Combination 573: Vin = -0.79367, Drift = -0.15873
 Combination 574: Vin = -0.7758, Drift = -0.15516
 Combination 575: Vin = -0.75688, Drift = -0.15138
 Combination 576: Vin = -0.7379, Drift = -0.14758
 Combination 577: Vin = -0.71814, Drift = -0.14363
 Combination 578: Vin = -0.69772, Drift = -0.13954
 Combination 579: Vin = -0.67669, Drift = -0.13534
 Combination 580: Vin = -0.65509, Drift = -0.13102
 Combination 581: Vin = -0.63295, Drift = -0.12659
 Combination 582: Vin = -0.61025, Drift = -0.12205
 Combination 583: Vin = -0.58711, Drift = -0.11742
 Combination 584: Vin = -0.56348, Drift = -0.1127
 Combination 585: Vin = -0.53939, Drift = -0.10788
 Combination 586: Vin = -0.51488, Drift = -0.10298
 Combination 587: Vin = -0.48995, Drift = -0.09799
 Combination 588: Vin = -0.46465, Drift = -0.09293
 Combination 589: Vin = -0.43899, Drift = -0.087798
 Combination 590: Vin = -0.41299, Drift = -0.082598
 Combination 591: Vin = -0.38671, Drift = -0.077342
 Combination 592: Vin = -0.36014, Drift = -0.072028
 Combination 593: Vin = -0.33332, Drift = -0.066664
 Combination 594: Vin = -0.30628, Drift = -0.061256
 Combination 595: Vin = -0.27904, Drift = -0.055807
 Combination 596: Vin = -0.25162, Drift = -0.050325
 Combination 597: Vin = -0.22407, Drift = -0.044813
 Combination 598: Vin = -0.19639, Drift = -0.039277
 Combination 599: Vin = -0.16863, Drift = -0.033725
 Combination 600: Vin = -0.1408, Drift = -0.028161
 Combination 601: Vin = -0.11294, Drift = -0.022589
 Combination 602: Vin = -0.085077, Drift = -0.017015

Combination 603: Vin = -0.057231, Drift = -0.011446
 Combination 604: Vin = -0.029432, Drift = -0.0058864
 Combination 605: Vin = -0.0017072, Drift = -0.00034145
 Combination 606: Vin = 0.025909, Drift = 0.0051819
 Combination 607: Vin = 0.0534, Drift = 0.01068
 Combination 608: Vin = 0.080732, Drift = 0.016146
 Combination 609: Vin = 0.10788, Drift = 0.021576
 Combination 610: Vin = 0.13482, Drift = 0.026964
 Combination 611: Vin = 0.16152, Drift = 0.032304
 Combination 612: Vin = 0.18795, Drift = 0.037591
 Combination 613: Vin = 0.2141, Drift = 0.042821
 Combination 614: Vin = 0.23994, Drift = 0.047987
 Combination 615: Vin = 0.26543, Drift = 0.053086
 Combination 616: Vin = 0.29055, Drift = 0.058111
 Combination 617: Vin = 0.31529, Drift = 0.063058
 Combination 618: Vin = 0.33961, Drift = 0.067922
 Combination 619: Vin = 0.36349, Drift = 0.072698
 Combination 620: Vin = 0.38691, Drift = 0.077382
 Combination 621: Vin = 0.40984, Drift = 0.081967
 Combination 622: Vin = 0.43227, Drift = 0.086454
 Combination 623: Vin = 0.45417, Drift = 0.090834
 Combination 624: Vin = 0.47552, Drift = 0.095103
 Combination 625: Vin = 0.49629, Drift = 0.099258
 Combination 626: Vin = 0.51647, Drift = 0.10329
 Combination 627: Vin = 0.53604, Drift = 0.10721
 Combination 628: Vin = 0.55497, Drift = 0.11099
 Combination 629: Vin = 0.57326, Drift = 0.11465
 Combination 630: Vin = 0.59087, Drift = 0.11817
 Combination 631: Vin = 0.60778, Drift = 0.12156
 Combination 632: Vin = 0.62398, Drift = 0.1248
 Combination 633: Vin = 0.63957, Drift = 0.12791
 Combination 634: Vin = 0.65436, Drift = 0.13087
 Combination 635: Vin = 0.66839, Drift = 0.13368
 Combination 636: Vin = 0.68167, Drift = 0.13633
 Combination 637: Vin = 0.69417, Drift = 0.13883
 Combination 638: Vin = 0.70588, Drift = 0.14118
 Combination 639: Vin = 0.71678, Drift = 0.14336
 Combination 640: Vin = 0.72687, Drift = 0.14537
 Combination 641: Vin = 0.73612, Drift = 0.14722
 Combination 642: Vin = 0.74452, Drift = 0.1489
 Combination 643: Vin = 0.75206, Drift = 0.15041
 Combination 644: Vin = 0.75874, Drift = 0.15175
 Combination 645: Vin = 0.76454, Drift = 0.15291
 Combination 646: Vin = 0.77017, Drift = 0.15403
 Combination 647: Vin = 0.7744, Drift = 0.15488
 Combination 648: Vin = 0.77777, Drift = 0.15555
 Combination 649: Vin = 0.78028, Drift = 0.15606
 Combination 650: Vin = 0.78192, Drift = 0.15638
 Combination 651: Vin = 0.78269, Drift = 0.15654
 Combination 652: Vin = 0.7826, Drift = 0.15652
 Combination 653: Vin = 0.78164, Drift = 0.15633
 Combination 654: Vin = 0.77981, Drift = 0.15596
 Combination 655: Vin = 0.77712, Drift = 0.15542
 Combination 656: Vin = 0.77356, Drift = 0.15471
 Combination 657: Vin = 0.76915, Drift = 0.15383
 Combination 658: Vin = 0.76338, Drift = 0.15268
 Combination 659: Vin = 0.7574, Drift = 0.15148
 Combination 660: Vin = 0.75055, Drift = 0.15011
 Combination 661: Vin = 0.74285, Drift = 0.14857
 Combination 662: Vin = 0.73429, Drift = 0.14686
 Combination 663: Vin = 0.7249, Drift = 0.14498
 Combination 664: Vin = 0.71468, Drift = 0.14294
 Combination 665: Vin = 0.70365, Drift = 0.14073
 Combination 666: Vin = 0.69182, Drift = 0.13836

Combination 667: Vin = 0.67922, Drift = 0.13584
 Combination 668: Vin = 0.66586, Drift = 0.13317
 Combination 669: Vin = 0.65175, Drift = 0.13035
 Combination 670: Vin = 0.63691, Drift = 0.12738
 Combination 671: Vin = 0.62128, Drift = 0.12426
 Combination 672: Vin = 0.60505, Drift = 0.12101
 Combination 673: Vin = 0.58811, Drift = 0.11762
 Combination 674: Vin = 0.5705, Drift = 0.1141
 Combination 675: Vin = 0.55223, Drift = 0.11045
 Combination 676: Vin = 0.53333, Drift = 0.10667
 Combination 677: Vin = 0.51382, Drift = 0.10276
 Combination 678: Vin = 0.49371, Drift = 0.098742
 Combination 679: Vin = 0.47303, Drift = 0.094605
 Combination 680: Vin = 0.45179, Drift = 0.090358
 Combination 681: Vin = 0.43001, Drift = 0.086001
 Combination 682: Vin = 0.40774, Drift = 0.081549
 Combination 683: Vin = 0.38499, Drift = 0.076997
 Combination 684: Vin = 0.36176, Drift = 0.072353
 Combination 685: Vin = 0.3381, Drift = 0.06762
 Combination 686: Vin = 0.31402, Drift = 0.062804
 Combination 687: Vin = 0.28955, Drift = 0.057909
 Combination 688: Vin = 0.26471, Drift = 0.052941
 Combination 689: Vin = 0.23952, Drift = 0.047905
 Combination 690: Vin = 0.21402, Drift = 0.042805
 Combination 691: Vin = 0.18823, Drift = 0.037646
 Combination 692: Vin = 0.16218, Drift = 0.032435
 Combination 693: Vin = 0.13588, Drift = 0.027176
 Combination 694: Vin = 0.10937, Drift = 0.021875
 Combination 695: Vin = 0.082681, Drift = 0.016536
 Combination 696: Vin = 0.055829, Drift = 0.011166
 Combination 697: Vin = 0.028845, Drift = 0.0057689
 Combination 698: Vin = 0.0017538, Drift = 0.00035075
 Combination 699: Vin = -0.025409, Drift = -0.0050817
 Combination 700: Vin = -0.052625, Drift = -0.010525
 Combination 701: Vin = -0.079863, Drift = -0.015973
 Combination 702: Vin = -0.1071, Drift = -0.021419
 Combination 703: Vin = -0.1343, Drift = -0.026859
 Combination 704: Vin = -0.16144, Drift = -0.032288
 Combination 705: Vin = -0.18849, Drift = -0.037698
 Combination 706: Vin = -0.21543, Drift = -0.043086
 Combination 707: Vin = -0.24223, Drift = -0.048446
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 Combination 709: Vin = -0.29529, Drift = -0.059059
 Combination 710: Vin = -0.3215, Drift = -0.064301
 Combination 711: Vin = -0.34747, Drift = -0.069493
 Combination 712: Vin = -0.37315, Drift = -0.07463
 Combination 713: Vin = -0.39853, Drift = -0.079707
 Combination 714: Vin = -0.42359, Drift = -0.084717
 Combination 715: Vin = -0.44831, Drift = -0.089661
 Combination 716: Vin = -0.47264, Drift = -0.094528
 Combination 717: Vin = -0.49657, Drift = -0.099313
 Combination 718: Vin = -0.52007, Drift = -0.10401
 Combination 719: Vin = -0.54312, Drift = -0.10862
 Combination 720: Vin = -0.5657, Drift = -0.11314
 Combination 721: Vin = -0.58777, Drift = -0.11755
 Combination 722: Vin = -0.60931, Drift = -0.12186
 Combination 723: Vin = -0.63037, Drift = -0.12607
 Combination 724: Vin = -0.65084, Drift = -0.13017
 Combination 725: Vin = -0.67071, Drift = -0.13414
 Combination 726: Vin = -0.68999, Drift = -0.138
 Combination 727: Vin = -0.70863, Drift = -0.14173
 Combination 728: Vin = -0.7266, Drift = -0.14532
 Combination 729: Vin = -0.74384, Drift = -0.14877
 Combination 730: Vin = -0.76025, Drift = -0.15205

Combination 731: Vin = -0.77665, Drift = -0.15533
 Combination 732: Vin = -0.79188, Drift = -0.15838
 Combination 733: Vin = -0.80631, Drift = -0.16126
 Combination 734: Vin = -0.81979, Drift = -0.16396
 Combination 735: Vin = -0.83202, Drift = -0.1664
 Combination 736: Vin = -0.84261, Drift = -0.16852
 Combination 737: Vin = -0.85108, Drift = -0.17022
 Combination 738: Vin = -0.8571, Drift = -0.17142
 Combination 739: Vin = -0.86055, Drift = -0.17211
 Combination 740: Vin = -0.86167, Drift = -0.17233
 Combination 741: Vin = -0.86089, Drift = -0.17218
 Combination 742: Vin = -0.85878, Drift = -0.17176
 Combination 743: Vin = -0.85589, Drift = -0.17118
 Combination 744: Vin = -0.85267, Drift = -0.17053
 Combination 745: Vin = -0.84949, Drift = -0.1699
 Combination 746: Vin = -0.84661, Drift = -0.16932
 Combination 747: Vin = -0.84422, Drift = -0.16884
 Combination 748: Vin = -0.84242, Drift = -0.16848
 Combination 749: Vin = -0.8413, Drift = -0.16826
 Combination 750: Vin = -0.84088, Drift = -0.16818
 Combination 751: Vin = -0.8412, Drift = -0.16824
 Combination 752: Vin = -0.84223, Drift = -0.16845
 Combination 753: Vin = -0.84394, Drift = -0.16879
 Combination 754: Vin = -0.84627, Drift = -0.16925
 Combination 755: Vin = -0.8491, Drift = -0.16982
 Combination 756: Vin = -0.85227, Drift = -0.17045
 Combination 757: Vin = -0.85551, Drift = -0.1711
 Combination 758: Vin = -0.85848, Drift = -0.1717
 Combination 759: Vin = -0.86072, Drift = -0.17214
 Combination 760: Vin = -0.86167, Drift = -0.17233
 Combination 761: Vin = -0.86076, Drift = -0.17215
 Combination 762: Vin = -0.85752, Drift = -0.1715
 Combination 763: Vin = -0.85169, Drift = -0.17034
 Combination 764: Vin = -0.84333, Drift = -0.16867
 Combination 765: Vin = -0.83279, Drift = -0.16656
 Combination 766: Vin = -0.82053, Drift = -0.16411
 Combination 767: Vin = -0.80698, Drift = -0.1614
 Combination 768: Vin = -0.79243, Drift = -0.15849
 Combination 769: Vin = -0.77705, Drift = -0.15541
 Combination 770: Vin = -0.76046, Drift = -0.15209
 Combination 771: Vin = -0.74384, Drift = -0.14877
 Combination 772: Vin = -0.72636, Drift = -0.14527
 Combination 773: Vin = -0.70811, Drift = -0.14162
 Combination 774: Vin = -0.68916, Drift = -0.13783
 Combination 775: Vin = -0.66954, Drift = -0.13391
 Combination 776: Vin = -0.64928, Drift = -0.12986
 Combination 777: Vin = -0.6284, Drift = -0.12568
 Combination 778: Vin = -0.60688, Drift = -0.12138
 Combination 779: Vin = -0.58484, Drift = -0.11697
 Combination 780: Vin = -0.56222, Drift = -0.11244
 Combination 781: Vin = -0.53907, Drift = -0.10781
 Combination 782: Vin = -0.51539, Drift = -0.10308
 Combination 783: Vin = -0.49122, Drift = -0.098244
 Combination 784: Vin = -0.46658, Drift = -0.093317
 Combination 785: Vin = -0.4415, Drift = -0.0883
 Combination 786: Vin = -0.41598, Drift = -0.083196
 Combination 787: Vin = -0.39008, Drift = -0.078016
 Combination 788: Vin = -0.3638, Drift = -0.072761
 Combination 789: Vin = -0.33718, Drift = -0.067435
 Combination 790: Vin = -0.31023, Drift = -0.062045
 Combination 791: Vin = -0.28298, Drift = -0.056595
 Combination 792: Vin = -0.25546, Drift = -0.051092
 Combination 793: Vin = -0.22769, Drift = -0.045539
 Combination 794: Vin = -0.19971, Drift = -0.039941

```

Combination 795: Vin = -0.17154, Drift = -0.034307
Combination 796: Vin = -0.1432, Drift = -0.02864
Combination 797: Vin = -0.11473, Drift = -0.022945
Combination 798: Vin = -0.08614, Drift = -0.017228
Combination 799: Vin = -0.057473, Drift = -0.011495
Combination 800: Vin = -0.028749, Drift = -0.0057499
Combination 801: Vin = 0, Drift = 0

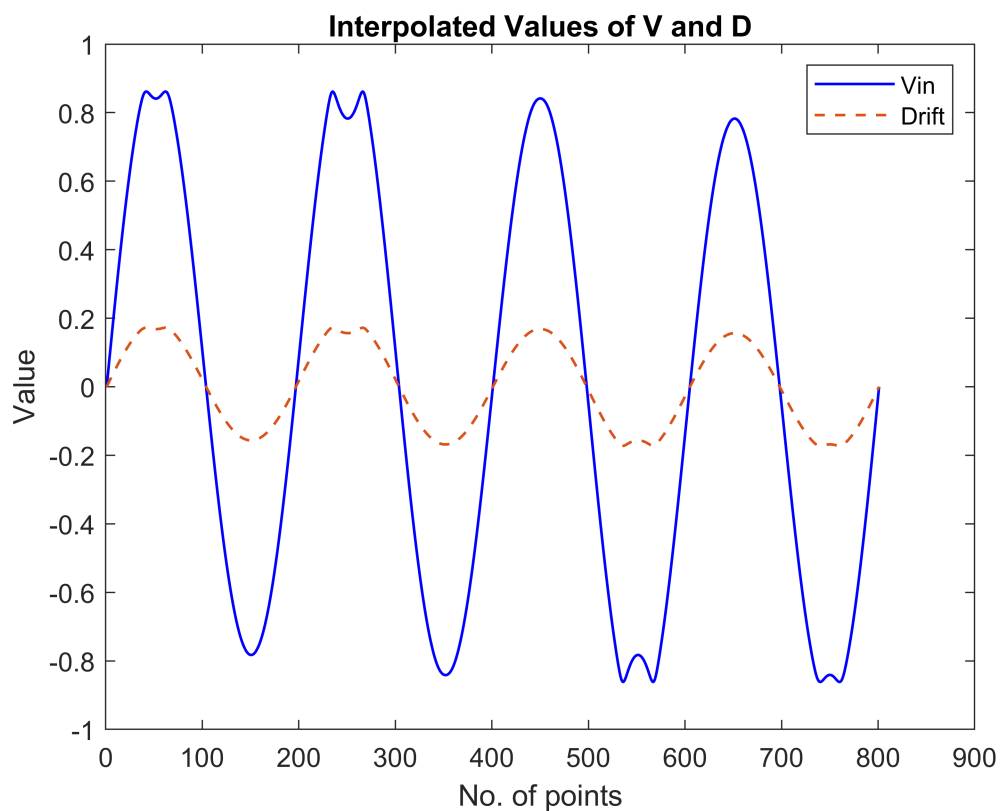
```

```

% Interpolate the values of V and D
t_interp = linspace(1, 801, 801); % Time points for interpolation
V_interp = interp1(1:801, Vin_values, t_interp, 'spline'); % Interpolated values of V
D_interp = interp1(1:801, Drift_values, t_interp, 'spline'); % Interpolated values of D

% Plot the graph
figure;
plot(t_interp, V_interp, 'b', 'LineWidth', 1);hold on;
plot(t_interp, D_interp, '--', 'LineWidth', 1);hold off;
xlabel('No. of points');ylabel('Value');legend('Vin', 'Drift');title('Interpolated Values of V

```



```

% Display the results
disp('Interpolated values of Vin and Drift:');

```

Interpolated values of Vin and Drift:

```

disp(['Time points: ' num2str(t_interp)]);

```

Time points: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

```
disp(['Vin: ' num2str(V_interp)]);
```

```
Vin: 0    0.028749    0.057473    0.08614    0.11473    0.1432    0.17154    0.19971    0.22769    0.25546
```

```
disp(['Drift: ' num2str(D_interp)]);
```

```
Drift: 0    0.0057499    0.011495    0.017228    0.022945    0.02864    0.034307    0.039941    0.045539    0.05109
```