```matlab
x = linspace(-5, 5, 1000)
y1 = x.^2;
y2 = x.^3;
y3 = exp(x);
y4 = sin(x).*cos(x);

figure;
plot(x, y1, 'DisplayName', 'y=x^2');
hold on;
plot(x, y2, 'Displayname', 'y2=x^3');
plot(x, y3, 'Displayname', 'y3 = exp^x;');
plot(x, y4, 'Displayname', 'y4 = sin(x).*cos(x)');

xlabel('x');
ylabel('y');
legend('show');
title('plot of function');
grid("on");
hold off
```

x =

  Columns 1 through 7

   -5.0000   -4.9900   -4.9800   -4.9700   -4.9600   -4.9499   -4.9399

  Columns 8 through 14

   -4.9299   -4.9199   -4.9099   -4.8999   -4.8899   -4.8799   -4.8699

  Columns 15 through 21

   -4.8599   -4.8498   -4.8398   -4.8298   -4.8198   -4.8098   -4.7998

  Columns 22 through 28

   -4.7898   -4.7798   -4.7698   -4.7598   -4.7497   -4.7397   -4.7297

  Columns 29 through 35

   -4.7197   -4.7097   -4.6997   -4.6897   -4.6797   -4.6697   -4.6597

  Columns 36 through 42

   -4.6496   -4.6396   -4.6296   -4.6196   -4.6096   -4.5996   -4.5896

  Columns 43 through 49

   -4.5796   -4.5696   -4.5596   -4.5495   -4.5395   -4.5295   -4.5195

  Columns 50 through 56

-4.5095   -4.4995   -4.4895   -4.4795   -4.4695   -4.4595   -4.4494

Columns 57 through 63

 -4.4394   -4.4294   -4.4194   -4.4094   -4.3994   -4.3894   -4.3794

Columns 64 through 70

 -4.3694   -4.3594   -4.3493   -4.3393   -4.3293   -4.3193   -4.3093

Columns 71 through 77

 -4.2993   -4.2893   -4.2793   -4.2693   -4.2593   -4.2492   -4.2392

Columns 78 through 84

 -4.2292   -4.2192   -4.2092   -4.1992   -4.1892   -4.1792   -4.1692

Columns 85 through 91

 -4.1592   -4.1491   -4.1391   -4.1291   -4.1191   -4.1091   -4.0991

Columns 92 through 98

 -4.0891   -4.0791   -4.0691   -4.0591   -4.0490   -4.0390   -4.0290

Columns 99 through 105

 -4.0190   -4.0090   -3.9990   -3.9890   -3.9790   -3.9690   -3.9590

Columns 106 through 112

 -3.9489   -3.9389   -3.9289   -3.9189   -3.9089   -3.8989   -3.8889

Columns 113 through 119

 -3.8789   -3.8689   -3.8589   -3.8488   -3.8388   -3.8288   -3.8188

Columns 120 through 126

 -3.8088   -3.7988   -3.7888   -3.7788   -3.7688   -3.7588   -3.7487

Columns 127 through 133

 -3.7387   -3.7287   -3.7187   -3.7087   -3.6987   -3.6887   -3.6787

Columns 134 through 140

 -3.6687   -3.6587   -3.6486   -3.6386   -3.6286   -3.6186   -3.6086

Columns 141 through 147

 -3.5986   -3.5886   -3.5786   -3.5686   -3.5586   -3.5485   -3.5385

Columns 148 through 154

 -3.5285   -3.5185   -3.5085   -3.4985   -3.4885   -3.4785   -3.4685

Columns 155 through 161

 -3.4585   -3.4484   -3.4384   -3.4284   -3.4184   -3.4084   -3.3984

Columns 162 through 168

 -3.3884   -3.3784   -3.3684   -3.3584   -3.3483   -3.3383   -3.3283

Columns 169 through 175

 -3.3183   -3.3083   -3.2983   -3.2883   -3.2783   -3.2683   -3.2583

Columns 176 through 182

 -3.2482   -3.2382   -3.2282   -3.2182   -3.2082   -3.1982   -3.1882

Columns 183 through 189

 -3.1782   -3.1682   -3.1582   -3.1481   -3.1381   -3.1281   -3.1181

Columns 190 through 196

 -3.1081   -3.0981   -3.0881   -3.0781   -3.0681   -3.0581   -3.0480

Columns 197 through 203

 -3.0380   -3.0280   -3.0180   -3.0080   -2.9980   -2.9880   -2.9780

Columns 204 through 210

 -2.9680   -2.9580   -2.9479   -2.9379   -2.9279   -2.9179   -2.9079

Columns 211 through 217

 -2.8979   -2.8879   -2.8779   -2.8679   -2.8579   -2.8478   -2.8378

Columns 218 through 224

 -2.8278   -2.8178   -2.8078   -2.7978   -2.7878   -2.7778   -2.7678

Columns 225 through 231

 -2.7578   -2.7477   -2.7377   -2.7277   -2.7177   -2.7077   -2.6977

Columns 232 through 238

 -2.6877   -2.6777   -2.6677   -2.6577   -2.6476   -2.6376   -2.6276

Columns 239 through 245

-2.6176   -2.6076   -2.5976   -2.5876   -2.5776   -2.5676   -2.5576

Columns 246 through 252

    -2.5475   -2.5375   -2.5275   -2.5175   -2.5075   -2.4975   -2.4875

Columns 253 through 259

    -2.4775   -2.4675   -2.4575   -2.4474   -2.4374   -2.4274   -2.4174

Columns 260 through 266

    -2.4074   -2.3974   -2.3874   -2.3774   -2.3674   -2.3574   -2.3473

Columns 267 through 273

    -2.3373   -2.3273   -2.3173   -2.3073   -2.2973   -2.2873   -2.2773

Columns 274 through 280

    -2.2673   -2.2573   -2.2472   -2.2372   -2.2272   -2.2172   -2.2072

Columns 281 through 287

    -2.1972   -2.1872   -2.1772   -2.1672   -2.1572   -2.1471   -2.1371

Columns 288 through 294

    -2.1271   -2.1171   -2.1071   -2.0971   -2.0871   -2.0771   -2.0671

Columns 295 through 301

    -2.0571   -2.0470   -2.0370   -2.0270   -2.0170   -2.0070   -1.9970

Columns 302 through 308

    -1.9870   -1.9770   -1.9670   -1.9570   -1.9469   -1.9369   -1.9269

Columns 309 through 315

    -1.9169   -1.9069   -1.8969   -1.8869   -1.8769   -1.8669   -1.8569

Columns 316 through 322

    -1.8468   -1.8368   -1.8268   -1.8168   -1.8068   -1.7968   -1.7868

Columns 323 through 329

    -1.7768   -1.7668   -1.7568   -1.7467   -1.7367   -1.7267   -1.7167

Columns 330 through 336

    -1.7067   -1.6967   -1.6867   -1.6767   -1.6667   -1.6567   -1.6466

Columns 337 through 343

  -1.6366   -1.6266   -1.6166   -1.6066   -1.5966   -1.5866   -1.5766

Columns 344 through 350

  -1.5666   -1.5566   -1.5465   -1.5365   -1.5265   -1.5165   -1.5065

Columns 351 through 357

  -1.4965   -1.4865   -1.4765   -1.4665   -1.4565   -1.4464   -1.4364

Columns 358 through 364

  -1.4264   -1.4164   -1.4064   -1.3964   -1.3864   -1.3764   -1.3664

Columns 365 through 371

  -1.3564   -1.3463   -1.3363   -1.3263   -1.3163   -1.3063   -1.2963

Columns 372 through 378

  -1.2863   -1.2763   -1.2663   -1.2563   -1.2462   -1.2362   -1.2262

Columns 379 through 385

  -1.2162   -1.2062   -1.1962   -1.1862   -1.1762   -1.1662   -1.1562

Columns 386 through 392

  -1.1461   -1.1361   -1.1261   -1.1161   -1.1061   -1.0961   -1.0861

Columns 393 through 399

  -1.0761   -1.0661   -1.0561   -1.0460   -1.0360   -1.0260   -1.0160

Columns 400 through 406

  -1.0060   -0.9960   -0.9860   -0.9760   -0.9660   -0.9560   -0.9459

Columns 407 through 413

  -0.9359   -0.9259   -0.9159   -0.9059   -0.8959   -0.8859   -0.8759

Columns 414 through 420

  -0.8659   -0.8559   -0.8458   -0.8358   -0.8258   -0.8158   -0.8058

Columns 421 through 427

  -0.7958   -0.7858   -0.7758   -0.7658   -0.7558   -0.7457   -0.7357

Columns 428 through 434

```
  -0.7257   -0.7157   -0.7057   -0.6957   -0.6857   -0.6757   -0.6657
```

Columns 435 through 441

```
  -0.6557   -0.6456   -0.6356   -0.6256   -0.6156   -0.6056   -0.5956
```

Columns 442 through 448

```
  -0.5856   -0.5756   -0.5656   -0.5556   -0.5455   -0.5355   -0.5255
```

Columns 449 through 455

```
  -0.5155   -0.5055   -0.4955   -0.4855   -0.4755   -0.4655   -0.4555
```

Columns 456 through 462

```
  -0.4454   -0.4354   -0.4254   -0.4154   -0.4054   -0.3954   -0.3854
```

Columns 463 through 469

```
  -0.3754   -0.3654   -0.3554   -0.3453   -0.3353   -0.3253   -0.3153
```

Columns 470 through 476

```
  -0.3053   -0.2953   -0.2853   -0.2753   -0.2653   -0.2553   -0.2452
```

Columns 477 through 483

```
  -0.2352   -0.2252   -0.2152   -0.2052   -0.1952   -0.1852   -0.1752
```

Columns 484 through 490

```
  -0.1652   -0.1552   -0.1451   -0.1351   -0.1251   -0.1151   -0.1051
```

Columns 491 through 497

```
  -0.0951   -0.0851   -0.0751   -0.0651   -0.0551   -0.0450   -0.0350
```

Columns 498 through 504

```
  -0.0250   -0.0150   -0.0050    0.0050    0.0150    0.0250    0.0350
```

Columns 505 through 511

```
   0.0450    0.0551    0.0651    0.0751    0.0851    0.0951    0.1051
```

Columns 512 through 518

```
   0.1151    0.1251    0.1351    0.1451    0.1552    0.1652    0.1752
```

Columns 519 through 525

```
   0.1852    0.1952    0.2052    0.2152    0.2252    0.2352    0.2452
```

Columns 526 through 532

   0.2553   0.2653   0.2753   0.2853   0.2953   0.3053   0.3153

Columns 533 through 539

   0.3253   0.3353   0.3453   0.3554   0.3654   0.3754   0.3854

Columns 540 through 546

   0.3954   0.4054   0.4154   0.4254   0.4354   0.4454   0.4555

Columns 547 through 553

   0.4655   0.4755   0.4855   0.4955   0.5055   0.5155   0.5255

Columns 554 through 560

   0.5355   0.5455   0.5556   0.5656   0.5756   0.5856   0.5956

Columns 561 through 567

   0.6056   0.6156   0.6256   0.6356   0.6456   0.6557   0.6657

Columns 568 through 574

   0.6757   0.6857   0.6957   0.7057   0.7157   0.7257   0.7357

Columns 575 through 581

   0.7457   0.7558   0.7658   0.7758   0.7858   0.7958   0.8058

Columns 582 through 588

   0.8158   0.8258   0.8358   0.8458   0.8559   0.8659   0.8759

Columns 589 through 595

   0.8859   0.8959   0.9059   0.9159   0.9259   0.9359   0.9459

Columns 596 through 602

   0.9560   0.9660   0.9760   0.9860   0.9960   1.0060   1.0160

Columns 603 through 609

   1.0260   1.0360   1.0460   1.0561   1.0661   1.0761   1.0861

Columns 610 through 616

   1.0961   1.1061   1.1161   1.1261   1.1361   1.1461   1.1562
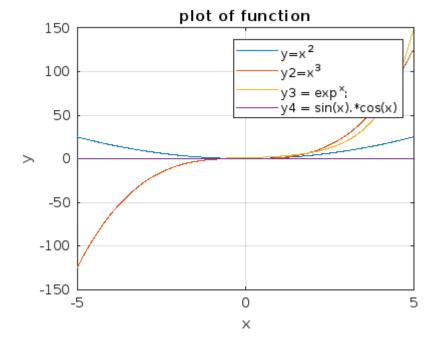
Columns 617 through 623

1.1662   1.1762   1.1862   1.1962   1.2062   1.2162   1.2262

Columns 624 through 630

1.2362   1.2462   1.2563   1.2663   1.2763   1.2863   1.2963

Columns 631 through 637

1.3063   1.3163   1.3263   1.3363   1.3463   1.3564   1.3664

Columns 638 through 644

1.3764   1.3864   1.3964   1.4064   1.4164   1.4264   1.4364

Columns 645 through 651

1.4464   1.4565   1.4665   1.4765   1.4865   1.4965   1.5065

Columns 652 through 658

1.5165   1.5265   1.5365   1.5465   1.5566   1.5666   1.5766

Columns 659 through 665

1.5866   1.5966   1.6066   1.6166   1.6266   1.6366   1.6466

Columns 666 through 672

1.6567   1.6667   1.6767   1.6867   1.6967   1.7067   1.7167

Columns 673 through 679

1.7267   1.7367   1.7467   1.7568   1.7668   1.7768   1.7868

Columns 680 through 686

1.7968   1.8068   1.8168   1.8268   1.8368   1.8468   1.8569

Columns 687 through 693

1.8669   1.8769   1.8869   1.8969   1.9069   1.9169   1.9269

Columns 694 through 700

1.9369   1.9469   1.9570   1.9670   1.9770   1.9870   1.9970

Columns 701 through 707

2.0070   2.0170   2.0270   2.0370   2.0470   2.0571   2.0671

Columns 708 through 714

2.0771   2.0871   2.0971   2.1071   2.1171   2.1271   2.1371

Columns 715 through 721

   2.1471   2.1572   2.1672   2.1772   2.1872   2.1972   2.2072

Columns 722 through 728

   2.2172   2.2272   2.2372   2.2472   2.2573   2.2673   2.2773

Columns 729 through 735

   2.2873   2.2973   2.3073   2.3173   2.3273   2.3373   2.3473

Columns 736 through 742

   2.3574   2.3674   2.3774   2.3874   2.3974   2.4074   2.4174

Columns 743 through 749

   2.4274   2.4374   2.4474   2.4575   2.4675   2.4775   2.4875

Columns 750 through 756

   2.4975   2.5075   2.5175   2.5275   2.5375   2.5475   2.5576

Columns 757 through 763

   2.5676   2.5776   2.5876   2.5976   2.6076   2.6176   2.6276

Columns 764 through 770

   2.6376   2.6476   2.6577   2.6677   2.6777   2.6877   2.6977

Columns 771 through 777

   2.7077   2.7177   2.7277   2.7377   2.7477   2.7578   2.7678

Columns 778 through 784

   2.7778   2.7878   2.7978   2.8078   2.8178   2.8278   2.8378

Columns 785 through 791

   2.8478   2.8579   2.8679   2.8779   2.8879   2.8979   2.9079

Columns 792 through 798

   2.9179   2.9279   2.9379   2.9479   2.9580   2.9680   2.9780

Columns 799 through 805

   2.9880   2.9980   3.0080   3.0180   3.0280   3.0380   3.0480

Columns 806 through 812

3.0581   3.0681   3.0781   3.0881   3.0981   3.1081   3.1181

Columns 813 through 819

3.1281   3.1381   3.1481   3.1582   3.1682   3.1782   3.1882

Columns 820 through 826

3.1982   3.2082   3.2182   3.2282   3.2382   3.2482   3.2583

Columns 827 through 833

3.2683   3.2783   3.2883   3.2983   3.3083   3.3183   3.3283

Columns 834 through 840

3.3383   3.3483   3.3584   3.3684   3.3784   3.3884   3.3984

Columns 841 through 847

3.4084   3.4184   3.4284   3.4384   3.4484   3.4585   3.4685

Columns 848 through 854

3.4785   3.4885   3.4985   3.5085   3.5185   3.5285   3.5385

Columns 855 through 861

3.5485   3.5586   3.5686   3.5786   3.5886   3.5986   3.6086

Columns 862 through 868

3.6186   3.6286   3.6386   3.6486   3.6587   3.6687   3.6787

Columns 869 through 875

3.6887   3.6987   3.7087   3.7187   3.7287   3.7387   3.7487

Columns 876 through 882

3.7588   3.7688   3.7788   3.7888   3.7988   3.8088   3.8188

Columns 883 through 889

3.8288   3.8388   3.8488   3.8589   3.8689   3.8789   3.8889

Columns 890 through 896

3.8989   3.9089   3.9189   3.9289   3.9389   3.9489   3.9590

Columns 897 through 903

3.9690   3.9790   3.9890   3.9990   4.0090   4.0190   4.0290

Columns 904 through 910

   4.0390   4.0490   4.0591   4.0691   4.0791   4.0891   4.0991

Columns 911 through 917

   4.1091   4.1191   4.1291   4.1391   4.1491   4.1592   4.1692

Columns 918 through 924

   4.1792   4.1892   4.1992   4.2092   4.2192   4.2292   4.2392

Columns 925 through 931

   4.2492   4.2593   4.2693   4.2793   4.2893   4.2993   4.3093

Columns 932 through 938

   4.3193   4.3293   4.3393   4.3493   4.3594   4.3694   4.3794

Columns 939 through 945

   4.3894   4.3994   4.4094   4.4194   4.4294   4.4394   4.4494

Columns 946 through 952

   4.4595   4.4695   4.4795   4.4895   4.4995   4.5095   4.5195

Columns 953 through 959

   4.5295   4.5395   4.5495   4.5596   4.5696   4.5796   4.5896

Columns 960 through 966

   4.5996   4.6096   4.6196   4.6296   4.6396   4.6496   4.6597

Columns 967 through 973

   4.6697   4.6797   4.6897   4.6997   4.7097   4.7197   4.7297

Columns 974 through 980

   4.7397   4.7497   4.7598   4.7698   4.7798   4.7898   4.7998

Columns 981 through 987

   4.8098   4.8198   4.8298   4.8398   4.8498   4.8599   4.8699

Columns 988 through 994

   4.8799   4.8899   4.8999   4.9099   4.9199   4.9299   4.9399

Columns 995 through 1,000

4.9499   4.9600   4.9700   4.9800   4.9900   5.0000

plot of function