EGN3204 — Engineering Software Tools
Pensacola (11193) Section
Spring 2017
Problem Set #2 (18 January, 2017 Lecture)
MATLAB R2015a, Word 2013

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1. MATLAB operation to determine numerical value for the two given expressions.
   a. A = ((−1.1)(−2.1)+log10(−35))/((2.7)(1.2)+(−2.35)(0.4)))

```
Clear all

>> a = ((-1.1)^(-2.1)+ log10(-35))/((2.7)^(1.2)+(-2.35)^(0.4))

a =

  0.6466 + 0.0659i

>>
```

   b. $b=\log_2(-8)$

```
Clear all

>> b = log2(-8)

b =

  3.0000 + 4.5324i

>>
```

2. For the complex numbers c = 3 – j4, d = -3 + j3 , f = 10sqrt(2)e-j(pi)/4

```
Clear all
>> c= 3 - j*4;
>> d = -3 + 3*j;
>> f = 10*sqrt(2)*exp(-(pi/4)*j);
>> g = f / c

g =

  2.8000 + 0.4000i

>> h = c* d

h =

  3.0000 +21.0000i

>> k = c * f

k =

 -10.0000 -70.0000i
>>
```

3. Determine each of the following vectors using MATLAB.
   a. >> l = linspace(27,63,5)

      l =

        27 36 45 54 63

   b. >> m = logspace(5,9,6)

      m =

        1.0e+09 *

        0.0001 0.0006 0.0040 0.0251 0.1585 1.0000

   c. >> n = linspace(11,62, 7)

      n =

       Columns 1 through 6

        11.0000 19.5000 28.0000 36.5000 45.0000 53.5000

       Column 7

        62.0000

      >>

4. Nodal analysis of an electrical circuit leads to a system of three equations:

   a. >>A(1,1) = 4;

      >>A(1,2) = -5;

      >>A(1,3) = 1;

      >>b(1,1) = 10 * exp(j * pi/2);