

**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.  $A = ((-1.1)(-2.1) + \log_{10}(-35)) / ((2.7)(1.2) + (-2.35)(0.4))$

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  $c = 3 - j4$ ,  $d = -3 + j3$ ,  $f = 10\sqrt{2}e^{-j(\pi/4)}$

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);`

I am sorry, I really don't know what I have to do for this question. I have gone through and double and triple checked the notes from last lecture and I cannot figure out how to properly implement this, even with the HINT.