Department of Information Technology

Communication Systems Lab (IT 2271)

Assignment 1

1. Draw a straight line satisfying the equation: $y = 3*x + 10$
2. Find transpose of the matrix

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A =
       16      3      2      13
        5     10     11      8
        9      6      7      12
        4     15     14      1
```

3. Multiply two matrices of sizes 3×3.
4. Create an identity matrix of size 4×4. Can you delete the second column of the matrix?
5. Find phase angle of (3+4i) in radian and degree.
6. Compute the trigonometric series $\sin(x) = x - x^3/3! + x^5/5! - x^7/7!$
7. Draw a cosine wave with frequency 10kHz. Use both *'plot'* and *'stem'* functions to see the difference.
8. Draw a circle with radius unity. (use $\cos\theta$ for x axis, $\sin\theta$ for y axis)
9. Write a Matlab code to plot both sin(t) and cos(t) on a same plot window. T varies from $-n * pi$ to $n * pi$.
10. Plot the autocorrelation sequence of a sinewave with frequency 1 Hz, sampling frequency of 200 Hz. (use function xcorr())