

## Matlab Individual Assignment #1 (Part A)

Section #: \_\_\_\_\_ Name: \_\_\_\_\_ UIN: \_\_\_\_\_

1. Compute the following expressions in Matlab (do all parts in the same M-file):

(a) 
$$\frac{2.3^2(1.7)}{\sqrt{(1 - 0.8^2) + (2 - \sqrt{0.87})^2}}$$

(b)  $2.34 + e^{1/2}(5.9^2 - 2.4^2) + 9.8 \ln 51$

(c)  $8.3^2 + \cos^2(2.4) - \frac{\sin^2(8.3)}{2.4^2}$

2. Repeat calculation 1c, but first define  $x = 8.3$  and  $y = 2.4$  and use these variables to calculate.

3. Create the following vectors:

(a)  $\left[ \frac{32}{3.2^2}, \sin^2 35^\circ, 6.1, \ln(29^2), e^{0.00552}, 133 \right]$

(b)  $[-4, -3.9, -3.8, -3.7, \dots, 1.8, 1.9, 2]$

4. Create a vector  $t$  with elements 0, 1, 2, 3, ... 8 and compute the following:

(a)  $x = \frac{t^2 - 2}{t + 4}$

(b)  $y = \frac{20t^{2/3}}{t + 1} - \frac{(t + 1)^2}{e^{(0.3t+5)}} + \frac{2}{t + 1}$

5. Plot the curves  $y_1 = \cos x$  and  $y_2 = 1 - \frac{1}{2}x^2 + \frac{1}{24}x^4$  in different colors on the same graph (use an  $x$ -range of  $-2\pi$  to  $2\pi$ ).

6. Plot the parametrized curve  $x = 1.5(t - \sin t)$ ,  $y = 1.5(t - \cos t)$ . Use a  $t$ -range of 0 to  $4\pi$ .