1. List the output you would get from the following Matlab® commands:
   a) `>> B = zeros(4);`
   b) `>> B = rand(1,3);`
   c) `>> B = ones(5,2);`
   `>> size(B)`
   `>> length(B)`
   `>> length(size(B))`

2. If `a = 2`, find the value of the following
   a) `a(ones(3,4))`
   b) `ones(a)`
   c) `zeros(3,a)`

3. Which of the following Matlab® commands produce valid output (without an error message)? If the output is valid, write what it is.
   a) `>> M = [eye(2); zeros(1,2)]`
   b) `>> M = [zeros(1), zeros(1,1); ones(2)]`
   c) `>> M = [zeros(2,1); eye(2,1)]`
   d) `>> M = [zeros(2), ones(2,3)]`

4. Given `t = 0 : 0.1 : 2*pi`, list the exact code you would enter at the command prompt in Matlab® to compute the following functions for all values of `t` using only one command:
   a) `sqrt(5*t)`
   b) `exp(-1/t)`
   c) `3 + ln(4*t)`
   `7*(e^tan(3*t) - 2)`
   where `ln = log_e` and `|x|` is absolute value

5. Given `t = 0 : 0.001 : 0.1`, list the exact code you would enter at the command prompt in Matlab® to compute the following function for all values of `t` using only one command:
   `5e^{-t/0.01} cos(2pi*100t) - 5e^{-t/0.01} sin(2pi*100t) + 10`

For the problems 6 through 8 and 10, use the following definition of matrix A:
   `>> A = magic(3)`
   `ans =`
   
   8 1 6
   3 5 7
   4 9 2

6. Find the results of executing the following Matlab® commands:
   a) `>> min(A(1:2,2:3))`
   b) `>> sort(A')`
   c) `>> sum([sum(A(1:2,:));sum(A')])`

7. Find the results of executing the following Matlab® commands:
   a) `>> find(A<=3)`
   b) `>> A>2`
   c) `>> A(A>2) d) >> A((A>2)+1)`

8. Answer the following questions and explain your answers.
   a) What property of A causes the equation `A(A') = A(A')` to be valid?
   b) What is the value of `A(A(2,1))`?
   c) What is the value of `A(A(2,1),A(2,1))`?
   d) What is the value of `A` after the following command: `>> A(min(A)) = []`
9. Write a display command to output the following message:
   Matlab's transpose symbol is ' (Hermitian transpose)

10. Write down a Matlab® command to build a string that looks like another Matlab® command
     that is the concatenation of the following strings:
     a) The following characters: A(1,:) = [
     b) The values in A(1,:) separated by spaces
     c) The following character: ]
     Note: do Not figure out what A(1,:) is and use those numbers. Instead, have Matlab®
         convert the values in A(1,:) into strings using num2str( ).

Selected answers:
1.b) ans =
   3
2.a)
   ans =
   2  2  2  2
       2  2  2  2
       2  2  2  2
3.c) >> M = [zeros(2,1); eye(2,1)]
   valid
   M =
   0
   0
   1
   0
   ans =
   0  0  1  1  1
   0  0  1  1  1
   valid
d) >> M = [zeros(2), ones(2,3)]
   ans =
   0
   0
   1
   1
   1

4.b) >> exp(-1 ./ t)
5. First part of solution: 5*exp(-t/0.01).*cos(2*pi*100*t) ...
6.c)
   ans =
   26  21  28
7.d)
   ans =
   3  8  3
   3  3  3
   3  3  8
8.d)
   A =
   1  5  9  6  7  2