UCR Department of Computer Science & Engineering

CS 30 Midterm Test -- May 2009

1. State the final value for each variable after executing the Matlab commands given below, starting from the following initial variable assignments:

   Food = 'apple';
   Texture = 'crisp';
   Dozen = 12;

   a. Lucky = Dozen +1

   b. Dessert = [Food, Texture]

   c. Dozen(3) = 36

   d. Mystery = Dozen(2)

   e. Grain = crisp(2,3,1); Grain(4) = Food(end)

   f. Pile_of_Stuff = {Food, Dozen}

2. Let M be a two dimensional array of numbers. Briefly describe the answer generated by each of the following Matlab commands

   a. size(M)

   b. loc = find (M > 47)

   c. B = numel(loc)

   d. M+1

3. Acme manufacturing makes two different products, which require the following amounts (in pounds) of four different raw materials:

	Umbrellas	Golf Clubs
Rubber	0.25	1.0
Titanium	0.0	3.0
Wood	2.0	0.0
Duct Tape	0.5	5.0

    a. Write some Matlab code to create a 2 row x 4 column element array called Materials to hold this information

    b. Write some Matlab commands (that could be saved as the M-script file "getOrders.m", say) to prompt the user to enter the number of umbrellas and golf clubs that need to be produced today, and store the information into a 2 row x 1 column array named Orders.

    c. Write the Matlab code to generate a 1 row x 4 column array called ShoppingList containing the total number of pounds required for each of the four different raw materials to make today's production of both products. [HINT: This is very easy using matrix multiplication.]

4. How many copies of 'Hello' and 'World' are output by the following Matlab code?

```
for i = 2:3
        'Hello'
        for j = 4:6
                if j == 2 * i
                        break
                end
                'World'
        end
end
```