

Name: _____

Student ID: _____

UCR Department of Computer Science & Engineering

CS 30 Midterm Test -- May 2010

1. Complete the following table about Matlab variable names by writing 'Yes' or 'No' to every question applied to every example:

Example:	Is a legal variable name?	Is a Pre-defined special variable?	Is a Reserved Word?
water_mellon			
pi			
#fishes			
case			

2. Let M be a two dimensional array of numbers. Write (some) Matlab statement(s) to carry out each of the following tasks. Assume that the size of M is large enough to make each task possible (i.e., M has at least 3 rows and 2 columns):
- Swap the values of elements $M(1,2)$ and $M(2,1)$ without changing the rest of M .
 - Find the number of elements of M with value 0.
 - Assign the contents of row 3 of M to the variable x .
 - Double the value of every element in M .
 - Change the value of the largest element in column 2 to 47.

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3. Acme manufacturing uses the following Matlab cell array to store information about the amount of raw materials (in pounds) required to make one unit from its two different products.

```
Materials={'Rubber' 0.25 1.0  
'Titanium' 0.0 3.0  
'Wood' 2.0 0.0  
'Duct Tape' 0.5 5.0}
```

- a. Briefly describe the difference in meaning between `Materials(1,1)` and `Materials{1,1}`. Which one allows you to see that the name of the first material is 'Rubber'?
- b. Write a Matlab statement to change the name of the second material from 'Titanium' to 'Cast Iron'.
- c. Does the following Matlab statement cause an error? If no, what happens?
`Materials{1,4}=1.25`
4. How many copies (and in which order) of 'Hello' and 'World' are output by the following Matlab code?

```
for i = 3:2:7  
    'Hello'  
    for j = 4:6  
        if i < j  
            continue  
        else  
            'Hello World'  
            break  
        end  
    end  
end  
end
```