

MATLAB exercise solutions (Century College, CSCI 1081, Spring 2021)

ex1.m

```
a = [1 2 3 4 5 6];  
%a = [1:6]; % also works  
  
disp(a * 7);
```

ex2.m

```
% not provided.
```

ex3a.m

```
a = [2 3 1 5; 1 0 3 1; 0 2 -3 2; 0 2 3 1];  
% either works for multiplying a matrix with a scalar:  
disp(a * 7);  
disp(a .* 7);
```

ex3b.m

```
a = [2 3 1 5; 1 0 3 1; 0 2 -3 2; 0 2 3 1];  
b = inv(a);  
disp(a * b); % result is (approx.) identity matrix
```

ex3c.m

```
a = [2 3 1 5; 1 0 3 1; 0 2 -3 2; 0 2 3 1];  
b = [1 2 3; 10 20 30; 0.1 0.2 0.3];  
matrixinfo(a);  
matrixinfo(b); % square matrix of Inf values
```

matrixinfo.m

```
function matrixinfo(m)  
% matrix_info(m)  
% Tell the user whether mtx is a square matrix. If it is a square matrix,  
% display the matrix's transpose and inverse.
```

```

msize = size(m);
if ndims(m) == 2 && msize(1) == msize(2),
    disp('It''s a square matrix.');
```

disp('The transpose is:');

disp(m');

disp('The inverse is:');

disp(inv(m));

```

else
    disp('The matrix isn''t square.');
```

end % if

```

end % function
```

Ch7PC5.m

```

% Input data for three monkeys
NUM_MONKEYS = 3;
NUM_DAYS = 5;

% initialize data to -1)
data = ones(NUM_MONKEYS, NUM_MONKEYS) * -1;

% Get monkey data
for monkey = 1:NUM_MONKEYS,
    disp('-----');
```

% enter row data as days of week

```

    for day = 1:NUM_DAYS,
        is_valid = false;
        while ~is_valid,
            prompt = ['Monkey ' num2str(monkey) ', day ' num2str(day) ':
'];
            data(monkey, day) = input(prompt);
            is_valid = data(monkey, day) >= 0;
            if ~is_valid,
                disp('Try again.');
```

end; % if

end % while

end % inner for

```

    end % outer for

% for each column, compute the average:
avgeaten = zeros(1, NUM_DAYS);
for day = 1:NUM_DAYS,
    avgeaten(day) = mean(data(:, day));
end % for

% Display report
```

```
disp('=====');  
disp('The average amount eaten on each day:');  
disp(avgeaten);  
  
disp(['The least amount eaten this week: ' num2str(min(min(data))) ]);  
disp(['The greatest amount eaten this week: ' num2str(max(max(data))) ]);  
disp('=====');
```

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