A Simple Matlab Programming Assignment
Solutions

Write a Matlab function exp_fraction to these specifications:

| **Input:** | x | an array (assumed to have at least one entry) |
| | *threshold* | a real value. |

| **Output:** | p | the fraction of the components x_i of x satisfying |
| | | $e^{x_i} \geq threshold$. |

Solution 1:

```
function p = exp_fraction (x, threshold)
%
%Input: x               an array (assumed to have at least one entry)
%             threshold       a real value.
%
%Output:      p               the fraction of the components of x satisfying
%                             exp( x(i)) >= threshold
%
n = 0;
for i = 1: length(x)
        if (exp(x(i)) >= threshold)
        n = n+1;
        end
end
p = n/length(x);
```

Solution 2:

```
function p = exp_fraction (x, threshold)
%
% …. (same comments as above)
%
p = sum (exp(x) >= threshold)/length(x);
```

Solution 3:

```
function p = exp_fraction (x, threshold)
%
%Input: x               an array (assumed to have at least one entry)
%             threshold       a real value (default value is zero).
%
%Output:      p               the fraction of the components of x satisfying
%                             exp( x(i)) >= threshold
%
if (nargin == 1)
        t = 0;
else
        t = threshold;
p = sum (exp(x) >= t)/length(x);
```