## Homework 2

#### Problem 1:

>> A = [5,9;-2,-4];

>> B = [3,1;2,-5];

>> C = [6,7;9,-3];

>> Z = A + B;

>> z2\_2 = Z(2, 2)

z2\_2 = -9

>> Z = A - B;

>> z1\_2 = Z(1, 2)

z1\_2 = 8

>> Z = A \* B;

>> z1\_2 = Z(1, 2)

z1\_2 = -40

>> Z = C\*A;

>> z2\_2 = Z(2, 2)

z2\_2 = 93

>> Z = A \* B \* C;

>> z2\_1 = Z(2, 1)

z2\_1 = 78

>> det\_B = det(B)

det\_B = -17

>> A\_inv = inv(A);

>> z2\_2 = A\_inv(2, 2)

z2\_2 = -2.5000

#### Problem 2:

>> A = [5,3,7; 5,9,1; -2,3,-4]

>> det\_A = det(A)

det\_A = 90.0000

>> Z = inv(A);

>> z2\_3 = Z(2, 3)

z2\_3 = 0.3333

#### Problem 3:

>>A = [1.3,1.25,-1;1.4,-1.5,0;6,-0.8,0];

>> B = [32 0 150]';

>> Aug = [A B];

>> F = rref(Aug);

>> F1 = F(1,4)

F1 = 28.5533

>> F2 = F(2,4)

F2 = 26.6497

>> F3 = F(3,4)

F3 = 38.4315

#### Problem 4:

prompt = "Enter the number of units: ";

x = input(prompt);

cost\_x = calculateCost(x);

fprintf('Cost for %d units: $%.2f\n', x, cost\_x);

%Test answers:

%Cost for 25 units: $250.00

%Cost for 250 units: $2200.00

%Cost for 6,700 units: $44200.00

%Cost for 18,500 units: $106500.00

function totalCost = calculateCost(units)

if units <= 100

totalCost = units \* 10;

elseif units <= 1000

totalCost = 1000 + (units - 100) \* 8;

elseif units <= 10000

totalCost = 1000 + 9000 + (units - 1000) \* 6;

else

totalCost = 1000 + 9000 + 54000 + (units - 10000) \* 5;

end

end