**Matlab Tutorial #1**

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**Question 1:**

Liz buys three apples, a dozen bananas, and one cantaloupe for $2.36. Bob buys a dozen apples and two cantaloupe for $5.26. Carol buys two bananas and three cantaloupe for $2.77. How much do single pieces of each fruit cost?

**hw1\_q1.m:**

clear, clc, close all

format short, format compact

A = [3 12 0; 12 0 2; 1 2 3];

b = [2.36; 5.26; 2.77];

X = inv(A) \* b;

fprintf(" Apple = $%.2f \n Banana = $%.2f \n Cantaloupe = $%.2f\n", X(1),X(2), X(3));

**Results**

Apple = $0.32

Banana = $0.12

Cantaloupe = $0.74

**Question 2:**

Write a function file that converts temperature in degrees Fahrenheit (◦F) to degrees Centigrade (◦C). Use input and fprintf commands to display a mix of text and numbers. Recall the conversion formulation, C = 5/9 ∗ (F − 32).

**Fahr2Cels.m:**

%This function will convert from Fahrenheit to Celcius

function[Celcius] = Fahr2Cels(Fahr)

F = Fahr;

Celcius = (5/9)\*(F - 32);

**hw1\_q2.m:**

clear, clc, close all

format short, format compact

Fahr = input('Enter the temperature in °F: ');

Cels = Fahr2Cels(Fahr);

fprintf("%d°F is %.0f°C.\n", Fahr, Cels);

**Results**

Enter the temperature in °F: 103

103°F is 39°C.

**Question 3:**

Write a user-defined MATLAB function, with two input and two output arguments that determines the height in centimeters (cm) and mass in kilograms (kg) of a person from his height in inches (in.) and weight in pounds (lb).

(a) Determine in SI units the height and mass of a 5 ft.15 in. person who weight 180 lb.

(b) Determine your own height and weight in SI units

**bodyConversion.m:**

%This function will convert from one SI unit to another

function [in, lb] = bodyConversion(cm, kg)

in = cm \* 2.54;

lb = kg / 2.205;

**hw1\_q3.m:**

%Prompts user to enter inputs

height = input('Enter height (in.): ');

mass = input('Enter mass (lb.): ');

%Calls function to do conversion

[cm, kg] = bodyConversion(height, mass);

fprintf("\nA person who is %d in. long and weighs %d lb.\n", height, mass);

fprintf("is %.2f cm. long and weighs %.2f kg.\n", cm, kg);

**Results**

Enter height (in.): 75

Enter mass (lb.): 180

A person who is 75 in. long and weighs 180 lb.

is 190.50 cm. long and weighs 81.63 kg.

Enter height (in.): 67

Enter mass (lb.): 125

A person who is 67 in. long and weighs 125 lb.

is 170.18 cm. long and weighs 56.69 kg.