A. x=[1 1 0 0 1 1]; ind=find(x)
1. What is ind ?
2. Draw a for-loop flow chart to emulate the 'find' instruction.
3. Write a Matlab function, such as ind=my_find(x), to implement your flow chart.

B. x=[1 2 3]; a=sum(x); b=sum(x.^2); c=length(x)
1. What are a,b and c?
2. Draw a for-loop flow chart to calculate a and b c.
3. A=[b a;a c]; What is A?
4. Write a Matlab function, such as A=form_A(x), to implement your flow chart for determining matrix A.

C. x=[1 2 3]; y=[3 5 7]; e=sum(x.*y); f=sum(y); d=[e f]';
1. What are e and f?
2. Draw a for-loop flow chart to determine e and f.
3. What is d?
4. Write a Matlab function, e.x. d=form_d(x,y), to implement your flow chart for determining vector d

D. z=inv(A)*d; a=z(1);b=z(2)
1. What is z?
2. What is the meaning of z(1) and z(2)?
3. Draw a flow chart to determine the mean square error of approximating y(i) by a*x(i)+b

$$E(a,b) = \frac{1}{N} \sum_i (ax_i + b - y_i)^2$$