1. Vectorize this code! Write one assignment statement that will accomplish exactly the same thing as the given code (assume that the variable vec has been initialized):

1.a)

result= 0;

for i= 1:length(vec)

result = result + vec(i);

end

1.b)

result= 0;

for i= 1:length(vec)

if rem(i,2)==0

result = result + vec(i);

end

1.c)

result= 0;

for i= 1:length(vec)

if rem(vec(i),2)==0

result = result + vec(i);

end

1.d)

result= 0;

for i= 1:length(vec)

if rem(vec(i),2)==0

result = result + 1;

end

1. Create a vector of five random integers, each in the range from –10 to 10. Perform each of the following using only vectorized code:

* Subtract 3 from each element
* Count how many are positive
* Get the absolute value of each element
* Find the maximum.

1. Write a program to count the even and the odd elements in an array. Assuming the array = [1 7 8 2 7], the output should be even=2 and odd=3.
2. A company is calibrating some measuring instrumentation and has measured the radius and height of one cylinder 10 separate times; the measurements are in vector variables r and h. Use vectorized code to find the volume from each trial, which is given by pi\*r^2\*h. Also, use logical indexing first to make sure that all measurements were valid (> 0).
3. Write a program that reads an array of students’ grades from the user and creates an array of characters containing the corresponding alphanumeric grades. Use a function to do the conversion.

Example:

Enter students grades:[98 23 77 88 99 65 57]

Alphanumeric grades [A F C B A D F]

1. Write a program to calculate the distance between two sets of points.

Example:

P1=[1 2; 0 0; 10 12; 3 5]

P2=[4 5; 3 5;1 7; 3 4]

Dist=[ 4.2426 5.8310 10.2956 1.0000]

1. Write a program that reads an array of students’ grades from the user and creates 1x5 array containing the number of A, B, C, D, and F students.

Example:

Enter students grades:[98 23 77 88 99 65 57]

Students statistics

A B C D F

2 1 1 1 2