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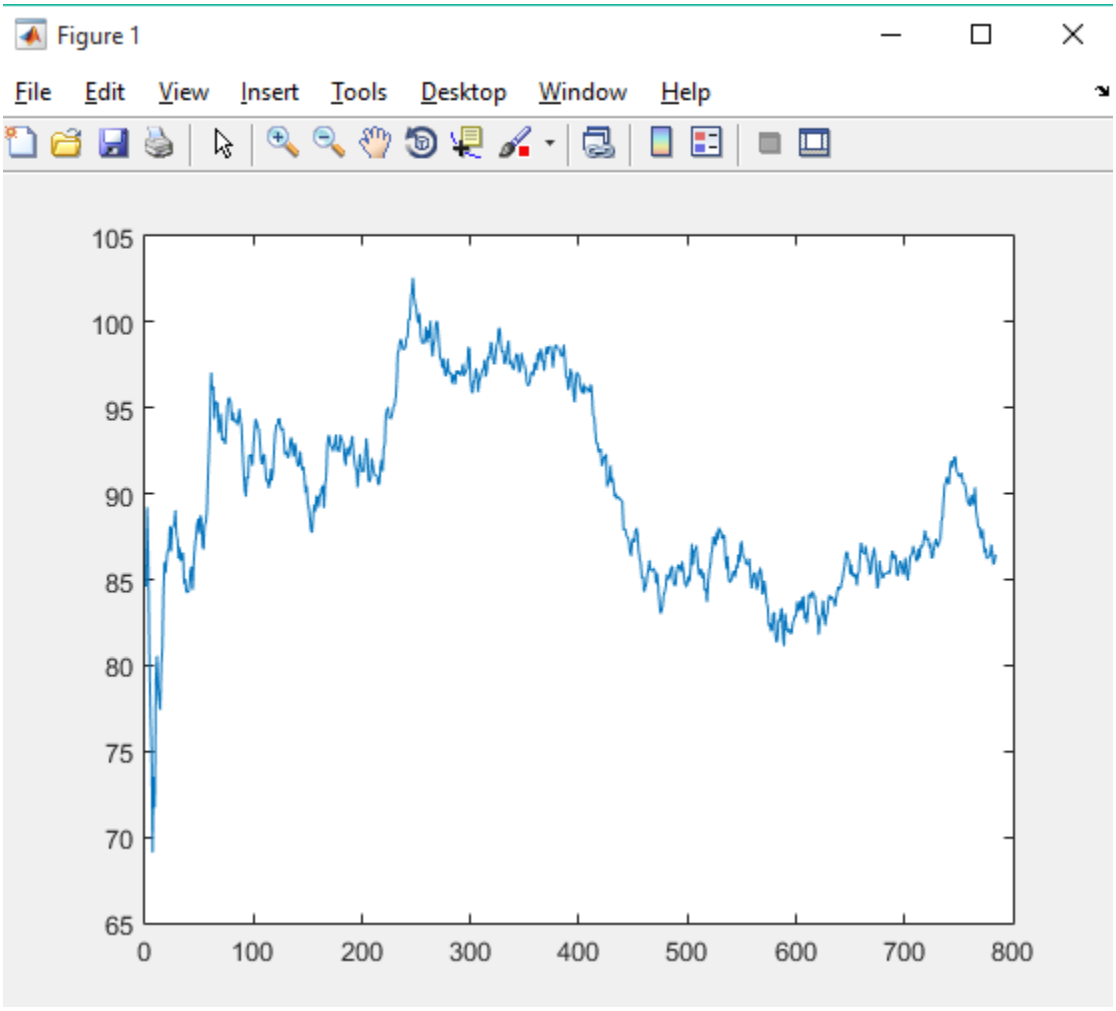
E. ~

```
52 -    listCorrect = [];
53 -  for i = 1 : 784
54 -      sumEigValue_PCA = sum(descV(:,1:i));
55 -       sumEigValue_PCA = sum(sumEigValue_PCA');%total element of eigen value 1:64
56 -
57 -       totalEigValue = sum(descV);
58 -       totalEigValue = sum(totalEigValue');%total element of all eigen value
59 -
60 -       correctRecons = (sumEigValue_PCA / totalEigValue) * 100 ; %variance of proportional
61 -       listCorrect = [listCorrect;  correctRecons];
62 -   end
63 -
64 -    plot(1:784,listCorrect);
```

Hasil :



F. ~

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```
97 -    A = [];
98 -    missRate = [];
99 -    miss = [0];
100 -   for i = 1:200
101 -       vFullPCA = descV(:,1:1000)';
102 -       prePCA = vFullPCA * X;
103 -       trainXPCA = vFullPCA' * prePCA;
104 -       if (mod(i,5)==0)
105          %Transform to PCA Domain
106 -        Vrow = descV(:,1:i)';
107 -        yPCA = Vrow *  X;
108 -        xRev = Vrow' * yPCA;
109          %training
110 -        Mdl = fitcknn(trainXPCA,y,'NumNeighbors', 15);
111          %predict label
112 -        label = predict(Mdl, xRev);
113
114 -           for j= 1:1000
115 -              if (label(j,1) ~= y(j,1))
116 -               miss = miss + 1;
117 -              end
118 -           end
119 -        missRate = [missRate ; miss/1000];
120 -       end
121 -   end
```

Output :

	1
1	0.4410
2	0.7020
3	0.8940
4	1.0670
5	1.2260
6	1.3780
7	1.5320
8	1.6780
9	1.8190
10	1.9600
11	2.1000
12	2.2370
13	2.3710
14	2.5030
15	2.6360
16	2.7670
17	2.8990
18	3.0300
19	3.1590
20	3.2920

G. ~

```
plot(5:5:200,missRate);
```

Hasil Plot

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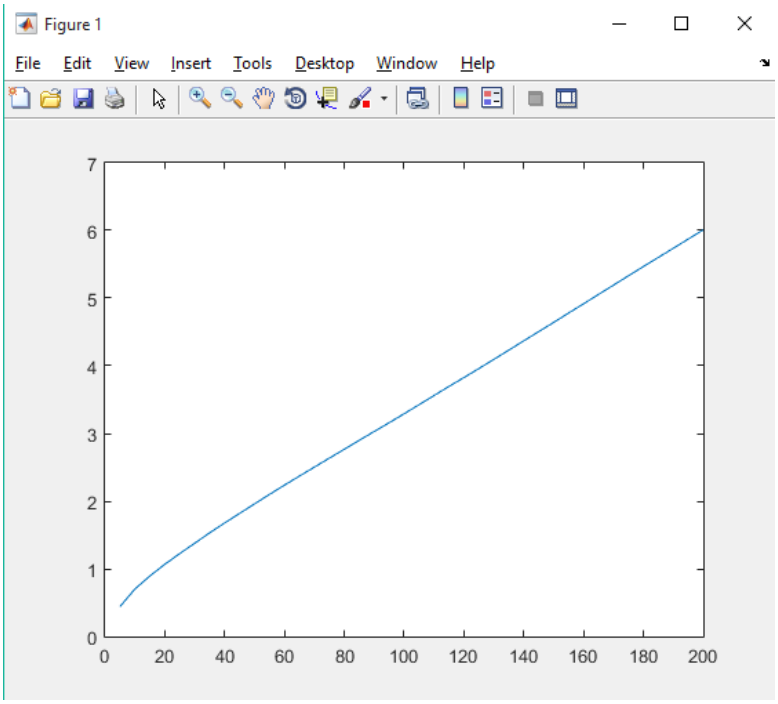

H. 5 first Principal components give best value