# Solution

1. Draw a graph of the theoretical values of area coverage $Z$ for set of $n$ jerseys $1, 2, \ldots, 8$, if $Z = [0.615\ 0.631\ 0.657\ 0.694\ 0.671\ 0.716\ 0.701\ 0.734]$, insert axis labels.

```
>> x=1:8;
>> y=[0.615 0.631 0.657 0.694 0.671 0.716 0.701 0.734];
>> plot(x,y,'o')
>> xlabel('jersey')
>> ylabel('area coverage [-]')
```

# Solution

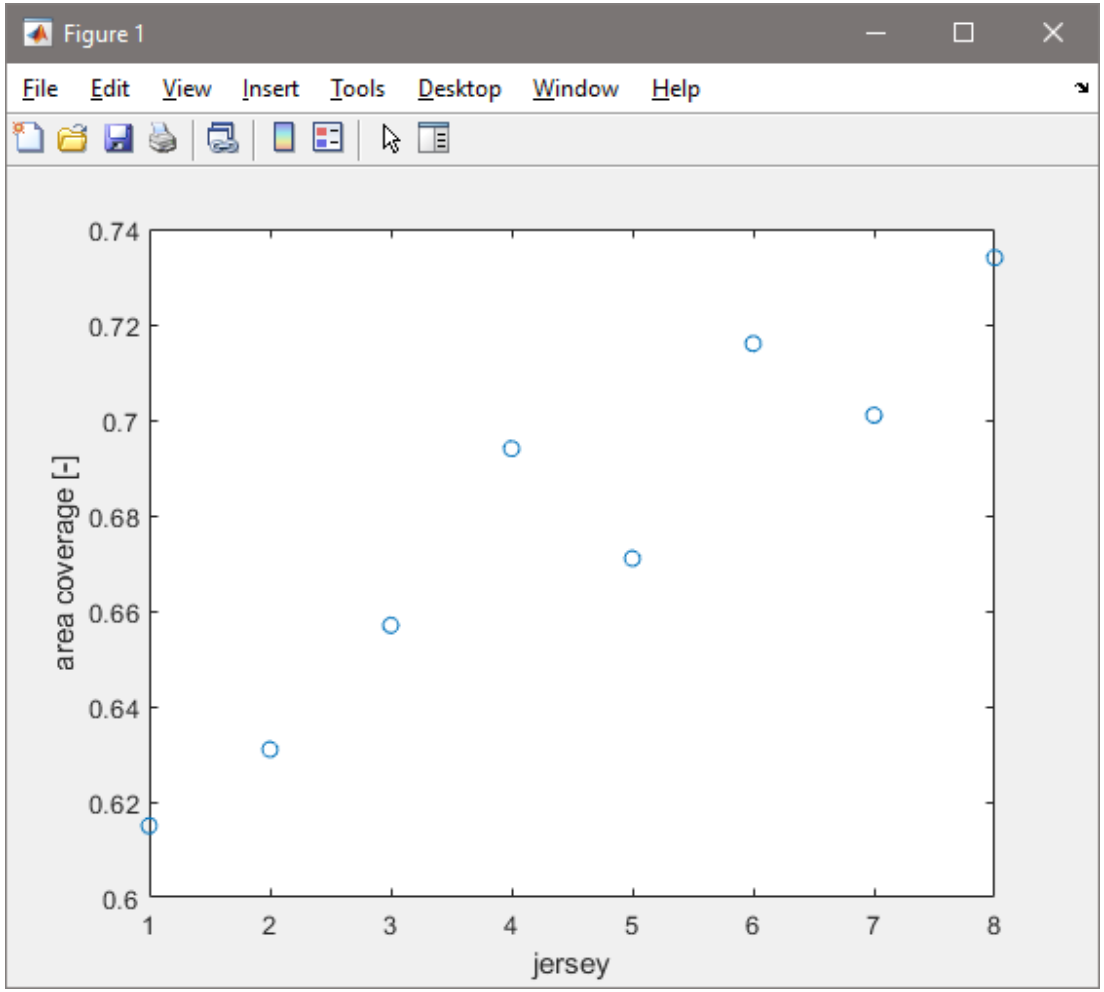
Figure 1
File Edit View Insert Tools Desktop Window Help
0.74
0.72
0.7
0.68
0.66
0.64
0.62
0.6
area coverage [-]
1 2 3 4 5 6 7 8
jersey

# Solution

2. Draw a graph of the dependence of porosity $P[\%] = [1.91\ 5.46\ 8.73\ 11.42\ 15.01]$ on the relative elongation of kinesiotape $\epsilon[\%] = [0\ 13.3\ 25\ 33.3\ 50]$. Insert axis labels.

```
>> epsilon=[0 13.3 25 33.3 50];
>> P=[1.91 5.46 8.73 11.42 15.01];
>> plot(epsilon,P,'*-')
>> xlabel('\epsilon [%]')
>> ylabel('P [%]')
```

# Solution

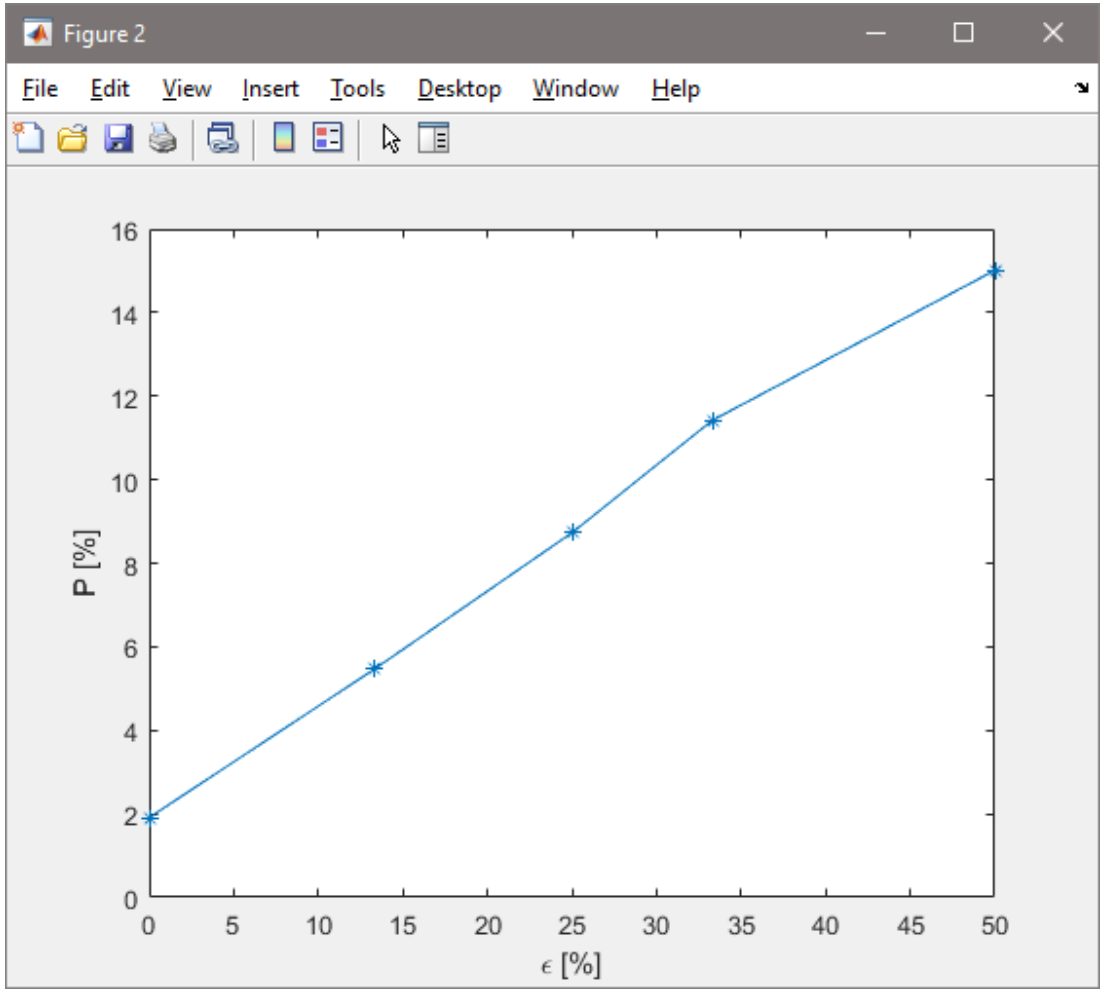
Figure 2
File Edit View Insert Tools Desktop Window Help
P [%]
ϵ [%]
0 2 4 6 8 10 12 14 16
0 5 10 15 20 25 30 35 40 45 50

# Solution

3. Generate a $X$ vector that contains 100 values from $N(0, 1)$ and in one Figure window draw even $X$ data with a red circle against the index and to the graph next to it odd $X$ data with a green circle and a line.

```
>> X=randn(1,100);
>> subplot(1,2,1),plot(2:2:length(X),X(2:2:end),'ro')
>> subplot(1,2,2),plot(1:2:length(X),X(1:2:end),'go-')
```

# Solution

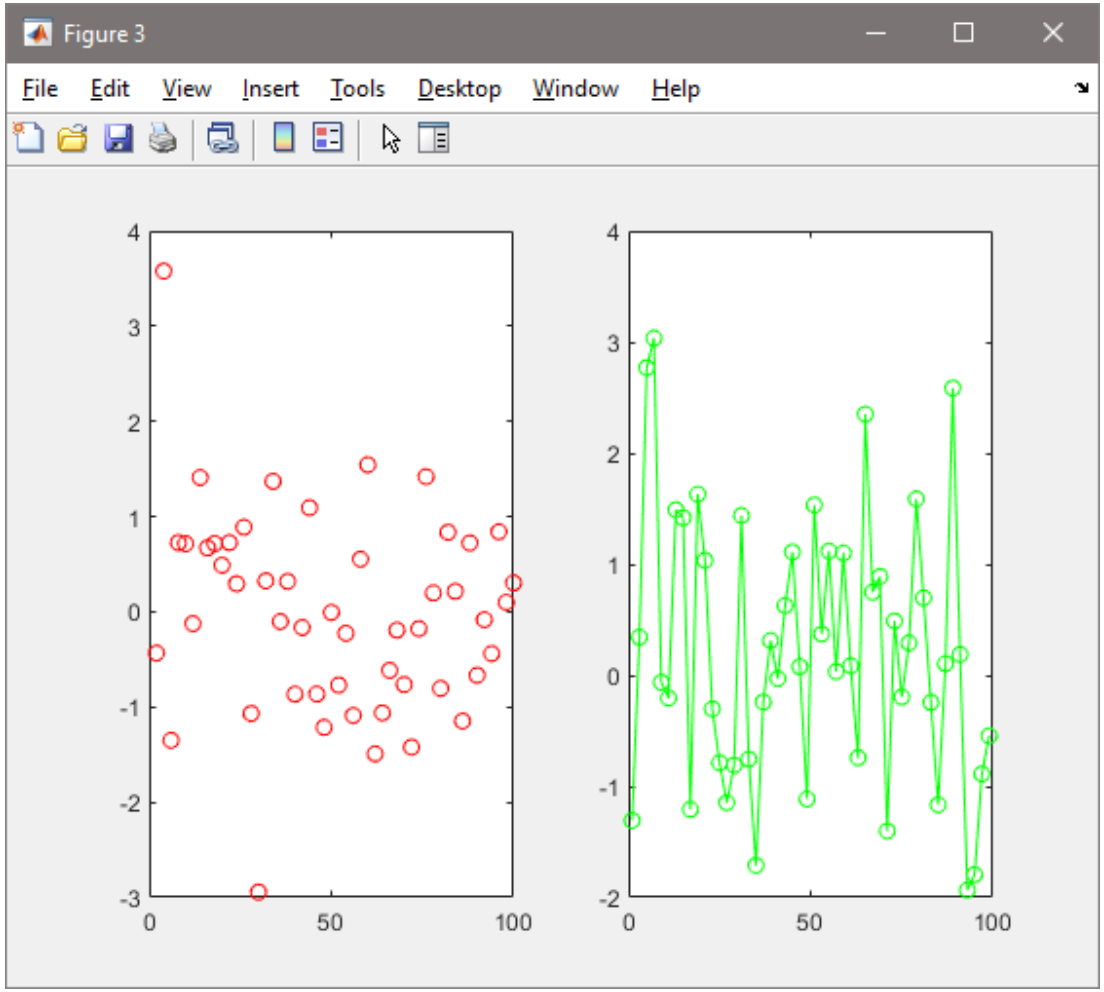
Figure 3
File Edit View Insert Tools Desktop Window Help
4
3
2
1
0
-1
-2
-3
0
50
100
4
3
2
1
0
-1
-2
0
50
100

# Solution

4. Draw probability density functions of normal distribution $N(\mu, \sigma^2)$ for parameters $\mu = [0\ 0\ 0\ 2]$ and $\sigma = [1\ 2\ 0.5\ 1]$, ie. $N(0.1)$, $N(0.2)$, $N(0.0.5)$, $N(2.1)$ at $x\ in < -10, 10 >$ to one chart with different color, insert legend. The probability density function of a normal distribution is defined by:

$$f(x) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{\frac{-(x-\mu)^2}{2\sigma^2}}$$

```
>> x=-10:0.1:10;
>> mu=0;
>> s=1;
>> y1=1/sqrt(2*pi*s^2)*exp((-(x-mu).^2/(2*pi*s^2)));
>> s=2;
>> y2=1/sqrt(2*pi*s^2)*exp((-(x-mu).^2/(2*pi*s^2)));
>> s=0.5;
>> y3=1/sqrt(2*pi*s^2)*exp((-(x-mu).^2/(2*pi*s^2)));
>> s=1;
>> mu=2;
>> y4=1/sqrt(2*pi*s^2)*exp((-(x-mu).^2/(2*pi*s^2)));
>> plot(x,y1,x,y2,x,y3,x,y4)
>> legend('N(0,1)','N(0,2)','N(0,0.5)','N(2,1)')
```

# Solution

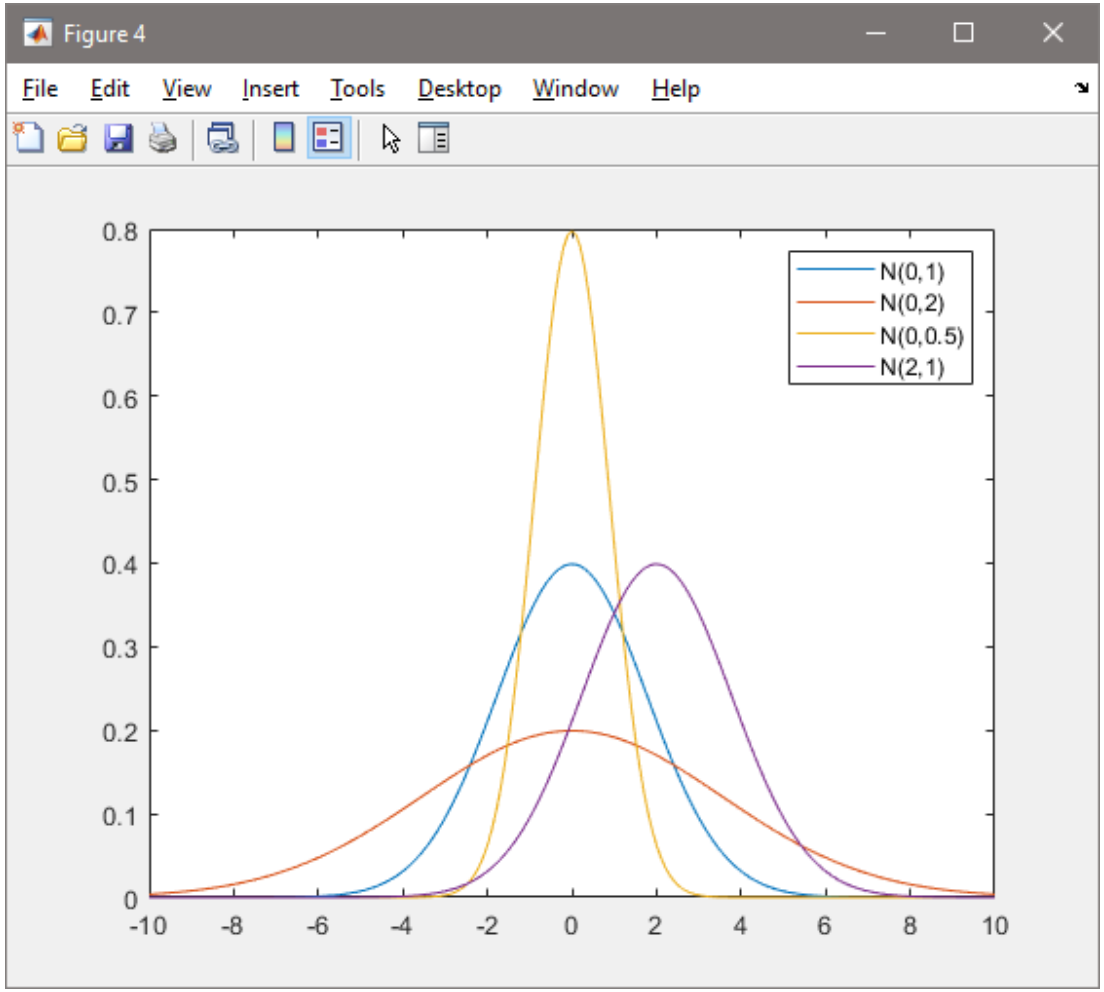
Figure 4
File Edit View Insert Tools Desktop Window Help
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-10 -8 -6 -4 -2 0 2 4 6 8 10
N(0,1)
N(0,2)
N(0,0.5)
N(2,1)