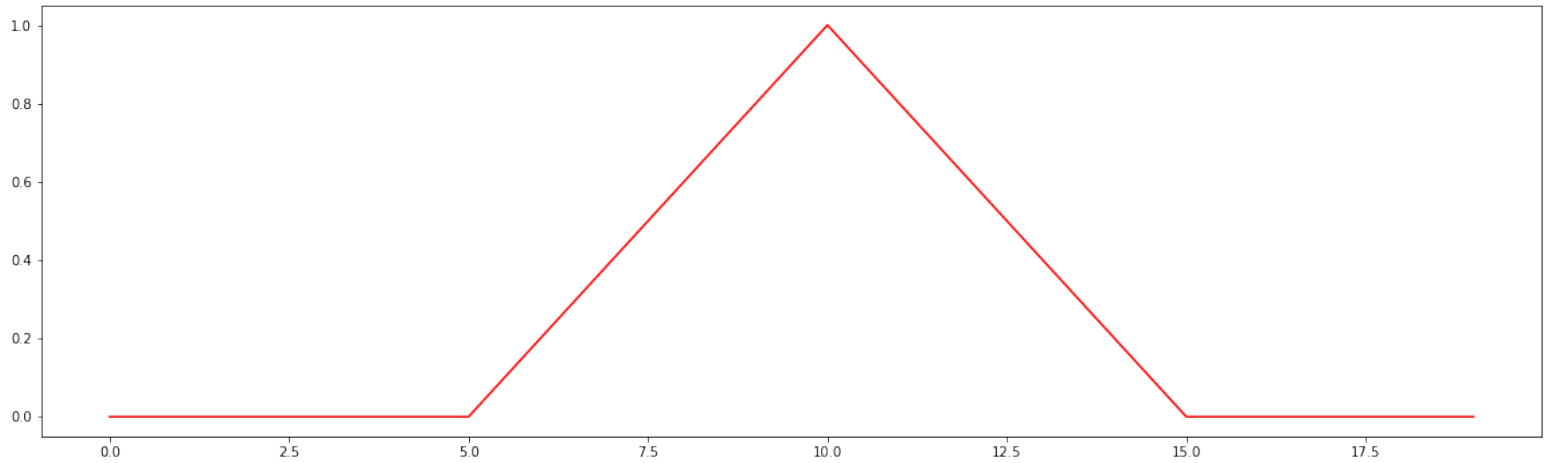
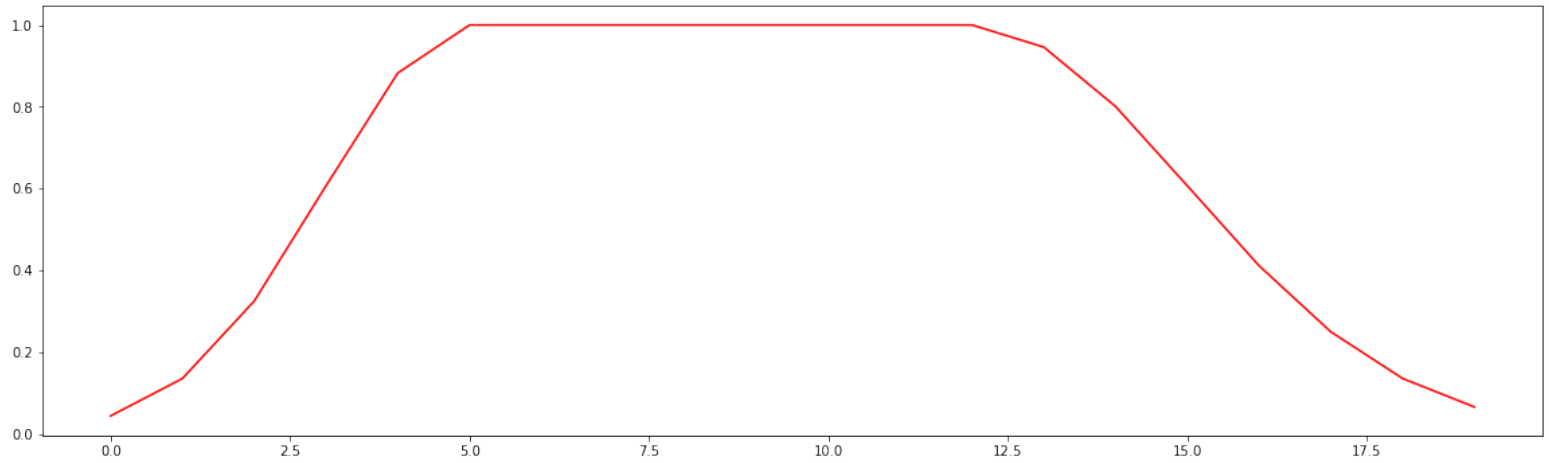
```
import matplotlib.pyplot as plt
plt.rcParams["figure.figsize"] = (20,7)
import skfuzzy
import numpy as np
import matplotlib.pyplot as plt
import skfuzzy as fuzz
from skfuzzy.membership import trimf,gauss2mf,gaussmf,gbellmf,sigmf

plt.rcParams["figure.figsize"] = (20,20)
x = np.arange(0,20)
mfx = fuzz.trimf(x, [5, 10, 15])
a = np.arange(0,30)
print ("X is",+x)
print ("mf of X is ",mfx)
print("Universal Set Of X is",+a)
plt.subplot(311)
plt.plot(x,mfx,"r")
```

```
X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19]
mf of X is  [0.  0.  0.  0.  0.  0.  0.2 0.4 0.6 0.8 1.  0.8 0.6 0.4 0.2 0.  0.  0.
 0.  0. ]
Universal Set Of X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
21 22 23
 24 25 26 27 28 29]

[<matplotlib.lines.Line2D at 0x174ddb16d88>]
```




```
mfx=fuzz.gauss2mf(x,5,2,12,3)
print ("X is",+x)
print ("mf of X is ",mfx)
print("Universal Set Of X is",+a)
plt.subplot(311)
plt.plot(x,mfx,"r")
```

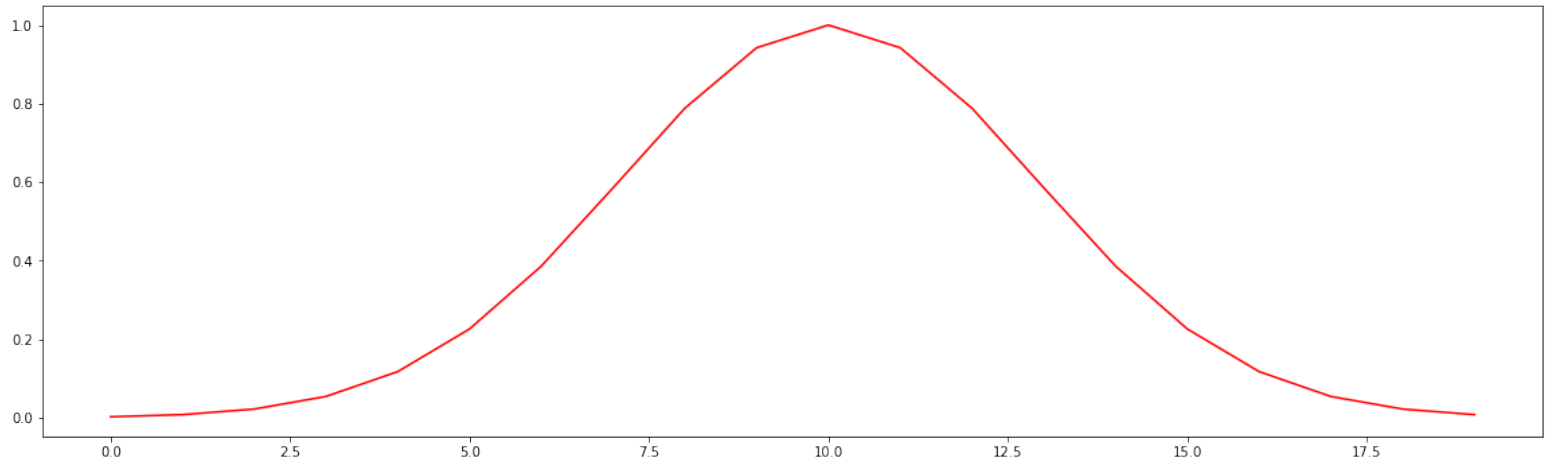
```
X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19]
mf of X is  [0.04393693 0.13533528 0.32465247 0.60653066 0.8824969  1.
 1.         1.         1.         1.         1.         1.
 1.         0.94595947 0.8007374  0.60653066 0.41111229 0.24935221
 0.13533528 0.06572853]
Universal Set Of X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
21 22 23
 24 25 26 27 28 29]

[<matplotlib.lines.Line2D at 0x174dea77ac8>]
```




```
mfx=fuzz.gaussmf(x,10,2.9)
print ("X is",+x)
print ("mf of X is ",mfx)
print("Universal Set Of X is",+a)
plt.subplot(311)
plt.plot(x,mfx,"r")
```

```
X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19]
mf of X is  [0.00261811 0.00810158 0.02225933 0.05430176 0.11761847 0.22620224
 0.38625847 0.58562403 0.78835079 0.94227979 1.         0.94227979
 0.78835079 0.58562403 0.38625847 0.22620224 0.11761847 0.05430176
 0.02225933 0.00810158]
Universal Set Of X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
21 22 23
 24 25 26 27 28 29]
```

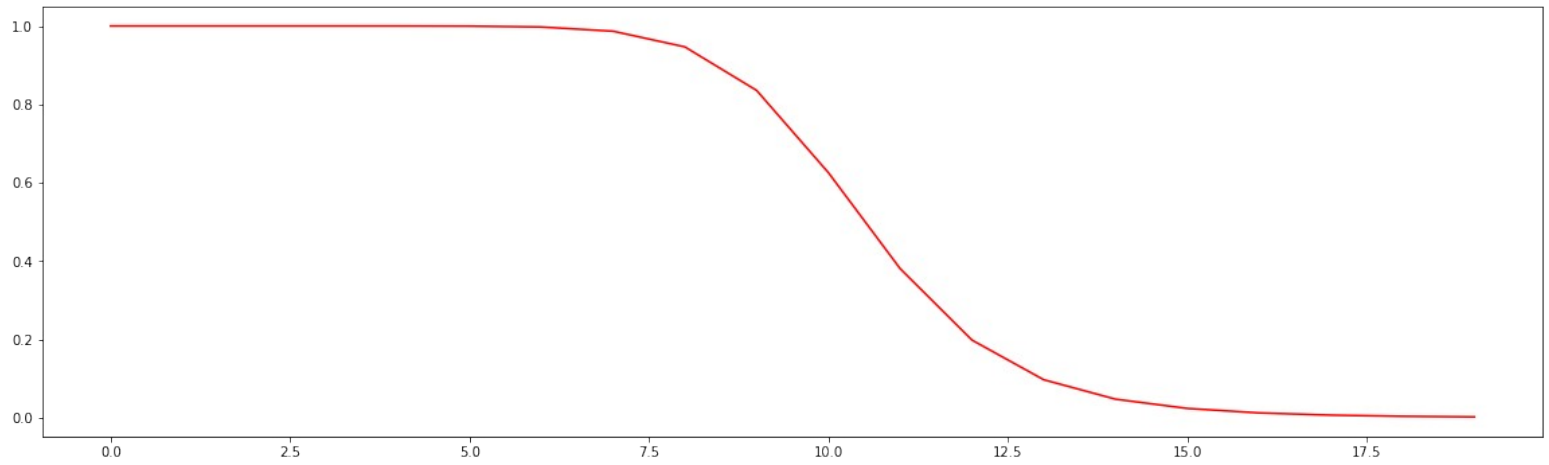
```
[<matplotlib.lines.Line2D at 0x174de916748>]
```




```
mfx=fuzz.gbellmf(x,10,5,0.5)
print ("X is",+x)
print ("mf of X is ",mfx)
print("Universal Set Of X is",+a)
plt.subplot(311)
plt.plot(x,mfx,"r")
```

```
X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19]
mf of X is  [1.         1.         0.99999999 0.99999905 0.99997242 0.99965961
 0.99747345 0.98671609 0.94668864 0.83550955 0.62549377 0.38038801
 0.19819414 0.09696287 0.04737864 0.02376161 0.01233931 0.00664151
```

```
 0.00369837 0.002125  ]
Universal Set Of X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
21 22 23
 24 25 26 27 28 29]

[<matplotlib.lines.Line2D at 0x174dfd11fc8>]
```




```
mfx=fuzz.sigmf(x,10,1.3)
print ("X is",+x)
print ("mf of X is ",mfx)
print("Universal Set Of X is",+a)
plt.subplot(311)
plt.plot(x,mfx,"r")

X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19]
mf of X is  [2.26032430e-06 8.29375037e-06 3.04315569e-05 1.11653341e-04
 4.09567165e-04 1.50118226e-03 5.48629890e-03 1.98403057e-02
 6.91384203e-02 2.14165017e-01 5.00000000e-01 7.85834983e-01
 9.30861580e-01 9.80159694e-01 9.94513701e-01 9.98498818e-01
 9.99590433e-01 9.99888347e-01 9.99969568e-01 9.99991706e-01]
Universal Set Of X is [ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20
21 22 23
 24 25 26 27 28 29]

[<matplotlib.lines.Line2D at 0x174e0f28748>]
```