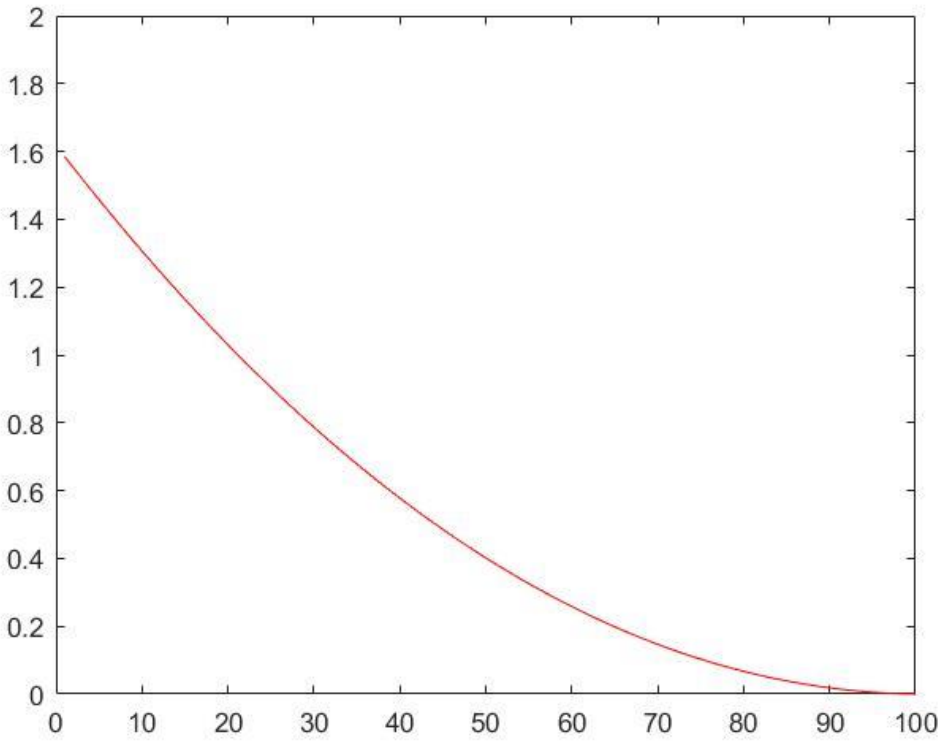
Here is the Exercise5.1 (b) figure



Here is the Matlab code to plot the figure

```
q=[1/2,1/4,1/4];
renyi=[];
for alpha=[0:0.01:1,1.01:1:101.01]
    renyi=[renyi,(1/1-alpha).* log2(sum(q .^alpha))]
end
SHANNON=-(sum (q .* log2 (q)))
figure(1)
plot(renyi,'r')
xlim([0 100])
ylim([0 2])
```