
3.3

```
clc;clear;close all
```

```
a1 = 0.212;  
a5 = 0.006;  
dB_difference = 30.96 ;
```

```
%Ratios become differences on a dB scale  
%P/Q become  
% $20\log_{10}(P/Q) = 20\log_{10}(P) - 20\log_{10}(Q)$   
% $A_2 = (2)A_1$  then  $A_2$  is 6 dB bigger than  $A_1$ , because with logs, we get  
% $20\log_{10}(A_1) = 20\log_{10}((1/2)A_2) = 20\log_{10}(A_2) +$   
% $20\log_{10}(1/2) = 20\log_{10}(A_2) \# 6.02\text{ dB}$   
  
%Similarly, given  $20\log_{10}(A_2) = 20\log_{10}(A_1) - 12\text{ dB} = 20\log_{10}(A_1) -$   
% $20\log_{10}(1/4) = 20\log_{10}((1/4)A_1)$   
%Therefore,  $A_2 = (4)A_1$   
  
%WHICH a to use
```

Published with MATLAB® R2022a