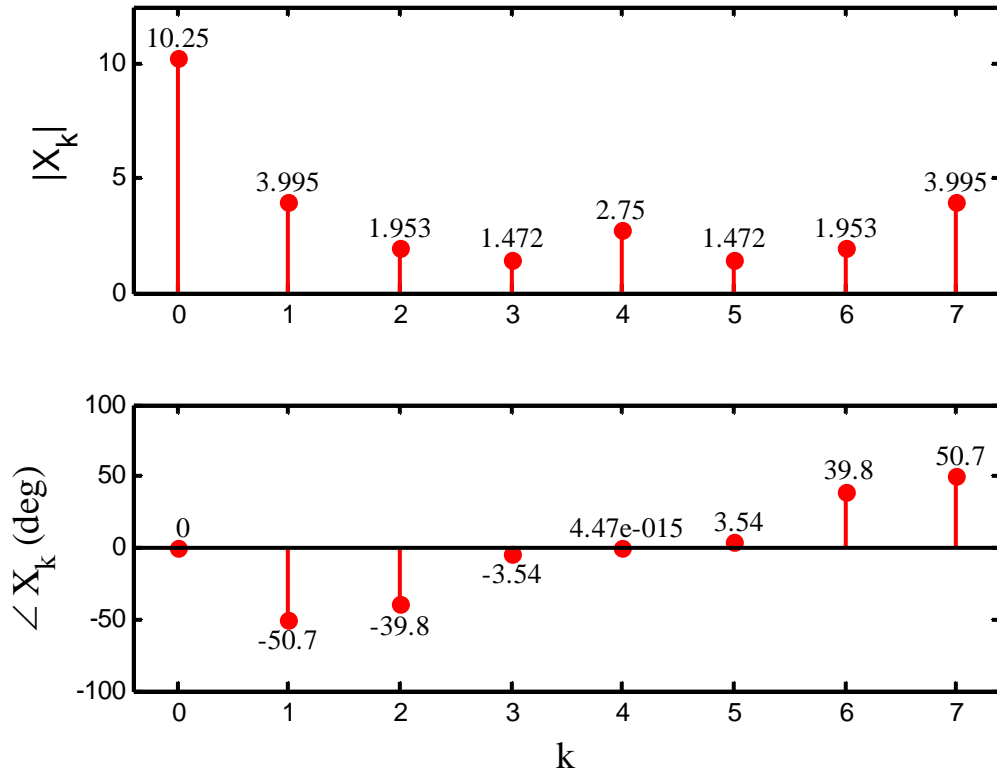


```

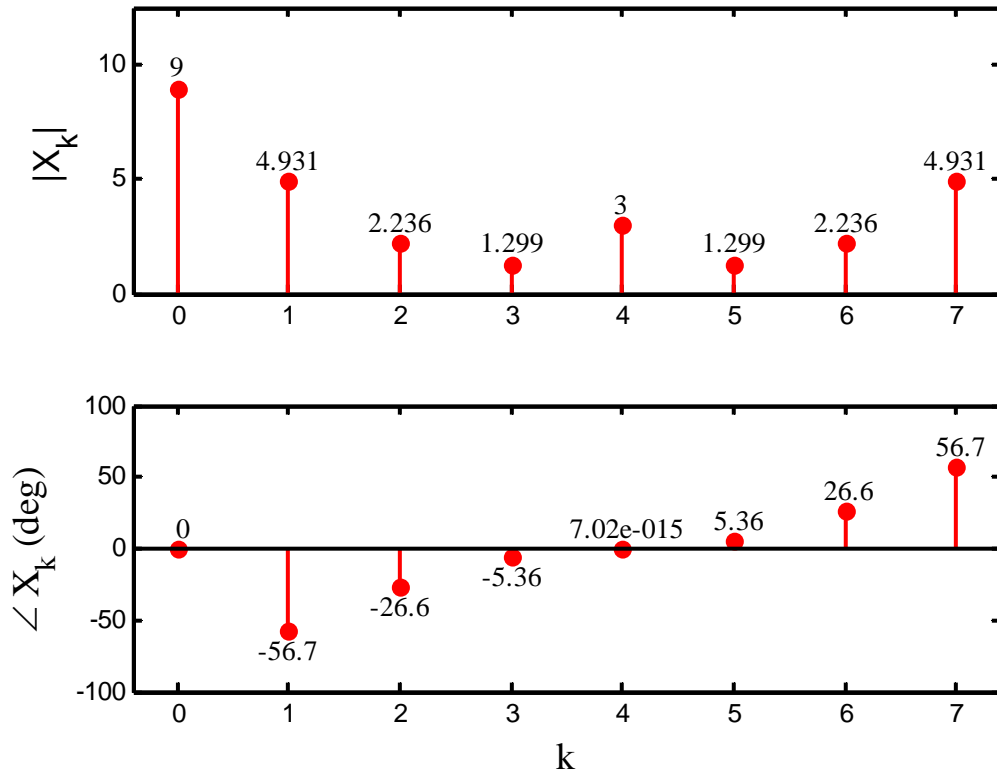
% Chapter 4 DFT Example 2 (chap_04_dft_example2.m)
% Compute DFT of x[n] where N=8 & K=8
% No truncation
%
x=[3,2,2,1,1,0.5,0.5,0.25]; % Define the input vector
Xk=dft(x); % compute DFT
Xkmag=abs(Xk);
Xkang=angle(Xk)*180/pi;
k=0:length(Xk)-1;
subplot(211),stem(k,Xkmag,'r.'),axis([-0.4 7.4 0 12.5]),
ylabel('|X_k|','fontsize',14,'fontname','times roman'),
title('Example 2: Non-truncated DFT (L = N = 8)','fontsize',16,...
      'fontname','times'),
for m=1:length(Xk),
    text(k(m),Xkmag(m)+0.2,[' ',num2str(Xkmag(m),4)],...
        'horizontalalignment','center','verticalalignment','bottom')
end
subplot(212),stem(k,Xkang,'r.'),axis([-0.4 7.4 -100 100]),
ylabel('\angle X_k (deg)','fontsize',14,'fontname','times'),
xlabel('k','fontsize',14,'fontname','times'),
for m=1:length(Xk),
    if(Xkang(m)>=0),
        text(k(m)+0.05,Xkang(m)+3,[' ',num2str(Xkang(m),3)],...
            'horizontalalignment','center','verticalalignment','bottom')
    else
        text(k(m),Xkang(m)-3,[' ',num2str(Xkang(m),3)],...
            'horizontalalignment','center','verticalalignment','top')
    end
end
end
set(findobj('type','text'),'fontname','times')
set(findobj('type','line'),'linewidth',1.5)
set(findobj('type','line'),'markersize',18)
set(findobj('type','axes'),'linewidth',2)

```

Example 2: Non-truncated DFT (L = N = 8)



Example 2: Truncated DFT (L = 8, N = 5)



```

% Chapter 4 DFT Example 2 (chap_04_dft_example2_trunc.m)
% Compute DFT of x[n] where N=5 & L=8
% Truncated the series (last three are zeros)
%
x=[3,2,2,1,1,0,0,0]; % Define the input vector
Xk=dft(x); % compute DFT
Xkmag=abs(Xk);
Xkang=angle(Xk)*180/pi;
k=0:length(Xk)-1;
subplot(211),stem(k,Xkmag,'r.'),axis([-0.4 7.4 0 12.5]),
ylabel('|X_k|','fontsize',14,'fontname','times roman'),
title('Example 2: Truncated DFT (L = 8, N = 5)','fontsize',16,...
      'fontname','times'),
for m=1:length(Xk),
    text(k(m),Xkmag(m)+0.2,[' ',num2str(Xkmag(m),4)],...
        'horizontalalignment','center','verticalalignment','bottom')
end
subplot(212),stem(k,Xkang,'r.'),axis([-0.4 7.4 -100 100]),
ylabel('\angle X_k (deg)','fontsize',14,'fontname','times'),
xlabel('k','fontsize',14,'fontname','times'),
for m=1:length(Xk),
    if(Xkang(m)>=0),
        text(k(m)+0.05,Xkang(m)+3,[' ',num2str(Xkang(m),3)],...
            'horizontalalignment','center','verticalalignment','bottom')
    else
        text(k(m),Xkang(m)-3,[' ',num2str(Xkang(m),3)],...
            'horizontalalignment','center','verticalalignment','top')
    end
end
set(findobj('type','text'),'fontname','times')
set(findobj('type','line'),'linewidth',1.5)
set(findobj('type','line'),'markersize',18)
set(findobj('type','axes'),'linewidth',2)

```