10.1

```
load electricity.mat
usage

usage(2,end)=2.74

res=usage(:,1)

comm=usage(:,2)
ind=usage(:,3)

yrs=1991:2013

plot(yrs,res,"b--")
hold on
plot(yrs,comm,"k:")
plot(yrs,ind,"m-.")

title("July Electricity Usage")
legend("res","comm","ind")
```

10.2

```
load Cchord.mat
n=numel(y)
t=0:1:n-1

t=t/fs
plot(t,y)

yfft=abs(fft(y))

f=0:1:n-1

f=f*fs/n
plot(f,yfft)
xlim([0 1000])
```

14.1

```
lambdaEnd=lambdaStart+(nObs-1)*lambdaDelta
lambda=lambdaStart:lambdaDelta:lambdaEnd
lambda=(lambda)'

s=spectra(:,6)

loglog(lambda,s,".-")
xlabel("Wavelength")
ylabel("Intensity")

[sHa,idx]=min(s)
lambdaHa=lambda(idx)
```

```
hold on
plot(lambdaHa,sHa,"rs","Markersize",8)

z=lambdaHa/656.28-1
speed=z*299792.458

s=spectra(:,2)

s=spectra(:,7)
```

14.2

```
[sHa,idx] = min(spectra);
lambdaHa = lambda(idx);
z = lambdaHa/656.28 - 1;
speed = z*299792.458

for v=1:7
    s=spectra(:,v)
end

for v=1:7
    s=spectra(:,v)
    if speed(v)<=0
        loglog(lambda,s,"--")
    end
    hold on
end

for v=1:7
    s=spectra(:,v)
    if speed(v)<=0
        loglog(lambda,s,"--")
    else loglog(lambda,s,"LineWidth",3)
    end
    hold on
end
hold off

legend(starnames)

movaway=starnames(speed>0)

loglog(lambda,spectra)
legend(starnames)
```