```
%let path= /courses/d452b5e5ba27fe300;
libname taox1 "&path/taox1";

data tobcpro;
infile "&path/HW3p3.dat";
input year production;
;
run;
/*        3         */
proc sgplot data= tobcpro;
title 'tabacco production from 1871-1894';
series x=year y=production;
xaxis label="year";
yaxis label="productions";
run;

proc transreg data=tobcpro;
model boxcox(production) = identity(year);
output out= transtbc;
run;
proc arima data= transtbc ;
identify var=Tproduction nlag = 30;
identify var=Tproduction(1) nlag = 30;
estimate  q=1 method=ml;
run;

/*        4         */
data sales;
infile "&path/HW3p4.dat";
input x1 @@;
run;

proc sql;
create table sale as
select x1,monotonic() as months
from work.sales;quit;

proc sgplot data= sale;
title 'monthly retail sales from 01/1973-12/1983';
series x=months y=x1;
xaxis label="months";
yaxis label="sales";
run;

proc transreg data=sale;
model boxcox(x1) = identity(months);
output out= transtsale;
run;

proc arima data= transtsale;
```

```
identify var=Tx1 nlag=60;
identify var=Tx1(1,12) nlag=80;
estimate  p=(1,2)(12,24,36,48)   method=ml;
run;
/*       5        */
data repairs;
infile "&path/HW3B.txt";
input x2 @@;
run;

proc sql;
create table re as
select x2,monotonic() as months
from work.repairs;quit;

proc sgplot data= re;
title 'monthly retairs from 01/1972-10/1979';
series x=months y=x2;
xaxis label="months";
yaxis label="repairs";
run;

proc transreg data=re;
model boxcox(x2) = identity(months);
output out= tre;
run;

proc arima data= tre;
/*identify var=Tx2 nlag=60;*/
identify var=Tx2(1,12) nlag=60;
estimate  p=(12,24) q=(1)  method=ml;
```