

```
DATA asthma1;
    INPUT animal case num;
    DATALINES;
0 0 118
0 1 104
1 0 32
1 1 46
;
RUN;

PROC FORMAT;
    VALUE Aformat 1="Animal Present" 0="Animal Absent";
    VALUE Cformat 1="Case" 0="Control";
    VALUE Uformat 1="Urban" 0="Rural";
RUN;

/*Q3a*/
PROC FREQ DATA=asthma1 ORDER=FORMATTED;
    FORMAT animal Aformat. case Cformat.;
    TABLES animal*case / NOPERCENT NOCOL NOROW ODDSRTATIO;
    WEIGHT num;
RUN;

/*Q3b*/
DATA asthmacollated;
    INPUT animal case urban num @@;
    DATALINES;
0 0 0 20 0 0 1 92
0 1 0 20 0 1 1 90
1 0 0 7 1 0 1 31
1 1 0 10 1 1 1 30
;
RUN;

PROC FREQ DATA=asthmacollated ORDER=FORMATTED;
    TITLE "Mantel-Haenszel estimate of the Odds Ratio";
    FORMAT animal Aformat. case Cformat. urban Uformat.;
    TABLE urban*animal*case / NOPERCENT NOCOL NOROW ODDSRTATIO CHISQ CMH PLOTS=none;
    WEIGHT num;
RUN;

PROC POWER;
    TWOSAMPLEFREQ TEST=pchi
    POWER = 0.8 0.85
    ALPHA = 0.05
    GROUPPROPORTIONS= (0.57 0.73)
    GROUPWEIGHTS = (1 1)
    NTOTAL=.;
RUN;
```