choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

6. COALWORKERS PNEUMOCONIOSIS

TABLE 29: DISTRIBUTION OF COALWORKERS PNEUMOCONIOSIS BY ETHNIC GROUP

<table>
<thead>
<tr>
<th>COALWORKERS PNEUMOCONIOSIS</th>
<th>BLACK</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Insignificant collagenisation and related focal emphysema</td>
<td>3</td>
<td>50.0</td>
</tr>
<tr>
<td>Significant collagenisation and related focal emphysema</td>
<td>3</td>
<td>50.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

IN SAS PROGRAM

1. New variable coal was created from variable milmac:
   if milmac=1 then coal='1'; else
   if milmac=2 then coal='2'; else
   if milmac=3 then coal='3';

   A format has been assigned to the new variable:
   value cwpfmt 1=’Insignificant collagenisation and related focal emphysema’
   2=’Significant collagenisation and related focal emphysema’
   3=’Significant collagenisation without related focal emphysema’;
   format coal cwpfmt;:

   New variables were created for the races namely: black, white, coloured, unknown from variable popcode:
   if popcode=1 then Black=1; else
   if popcode=2 then White=1; else
   if popcode=3 then Coloured=1; else
   if popcode=4 then Unknown=1;

IN SAS:

Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.cwprace
- move this table into the selected tables window by using the ➔
- choose OK
In the **available columns** window, choose all the relevant columns (variables) (usually everything up to unknown) (coal, black, white, coloured, unknown)
- move these to the **selected columns** window by using the [ ]
Highlight black, white, coloured, unknown by clicking on all of them
- go to **summary functions** and choose **count**

To add percentage columns:
- go to **build a column**
- choose **summary functions**, **count**, variable **black**
  - choose **OK**
  - choose **column attributes**
    - Type in at **Alias name**: bla
      - **Format**: percent15.1
      - **Label**: black%
  - choose **OK** and do the same for the white (whl), coloured(col) and unknown(unk) columns

To add row percentages:
- go to **build a column**
- choose **summary functions**, **count**, variable **black**, /, **operators**, (, **summary functions**, **count**, **black**, +, **count**, **white**, +, **count**, coloured, +, **count**, unknown, ), *, **constant enter value**, type in **100**
  - choose **OK**
  - choose **column attributes**
    - Type in at **Alias name**: blac
      - **Format**: best4.1
      - **Label**: b%
  - choose **OK** and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to **build a column**
  - choose **OK**
  - choose **column attributes**
  - Type in at **Alias name**: tot
    - **Format**:
    - **Label**: ALL RACES
  - To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it **Alias name**: tota
    - **Format**: percent15.1
    - **Label**: tot%

To set conditions:
- go to **Locals** (pull down menu)
- choose where conditions for subset
- choose variable **pnumber**, **other operators**, **contains**, <**CONSTANT enter value**>
  - type in 1997 ( to work only with 1997 cases)
  - choose **OK**, **OK**

To run report
- Choose **Actions** (pull down menu)
- Choose **Run query**, **design report**, **begin with default report**, **autogroup**, **yes**
For titles:
- Go to globals (pull down menu)
  - choose options, titles
  - type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: cwpneumo
report window: Coalworkers pneumoconiosis by race (r% for tables with row %)
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
- choose OK

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
  member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
  (Eg. c:\sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

---

**TABLE 30: DISTRIBUTION & PREVALENCE RATES OF COALWORKERS PNEUMOCONIOSIS BY AGE & ETHNIC GROUP**

<table>
<thead>
<tr>
<th>AGEGROUP</th>
<th>BLACK</th>
<th>N</th>
<th>%</th>
<th>RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-39</td>
<td></td>
<td>1</td>
<td>16.7</td>
<td>1.5</td>
</tr>
<tr>
<td>40-49</td>
<td></td>
<td>4</td>
<td>66.7</td>
<td>5.3</td>
</tr>
<tr>
<td>60-69</td>
<td></td>
<td>1</td>
<td>16.7</td>
<td>27.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>6</td>
<td>100.0</td>
<td>2.7</td>
</tr>
</tbody>
</table>
IN SAS PROGRAM

1. New variable agegrp was created to categorize the ages:
   if age>0 and age LE 19 then agegrp='0-19';
   else if age GE 20 and age LE 29 then agegrp='20-29';
   else if age GE 30 and age LE 39 then agegrp='30-39';
   else if age GE 40 and age LE 49 then agegrp='40-49';
   else if age GE 50 and age LE 59 then agegrp='50-59';
   else if age GE 60 and age LE 69 then agegrp='60-69';
   else if age GE 70 and age LE 79 then agegrp='70-79';
   else if age GE 80 and age LE 89 then agegrp='80-89';
   else if age GE 90 then agegrp='90+';
   else if age=0 then agegrp='Missing';

2. New variable coal was created from variable milmac:
   if milmac=1 then coal='1';
   else if milmac=2 then coal='2';
   else if milmac=3 then coal='3';

   A format has been assigned to the new variable:
   value cwpfmt 1='Insignificant collagenisation and related focal emphysema'
       2='Significant collagenisation and related focal emphysema'
       3='Significant collagenisation without related focal emphysema';
   format coal cwpfmt;

New variables were created for the races namely: black, white, coloured, unknown from variable postcode:
   if postcode=1 then Black=1;
   else if postcode=2 then White=1;
   else if postcode=3 then Coloured=1;
   else if postcode=4 then Unknown=1;

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.cwpagra
- move this table into the selected tables window by using the 
  - choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (agegrp, black, white, coloured, unknown)
- move these to the selected columns window by using the 
  - Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
  - choose summary functions, count, variable black
    - choose OK
  - choose column attributes
- Type in at Alias name: bla
  Format: percent15.1
  Label: black%
- choose OK and do the same for the white (whl), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black,
+ count, white, +, count, coloured, +, count, unknown, ), "<constant enter value>, type in 100
- choose OK
- choose column attributes
- Type in at Alias name: blac
  Format: best4.1
  Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose, summary functions, count, black, + count, white, + count, coloured, + count, unknown
- choose OK
- choose column attributes
- Type in at Alias name: tot
  Format:
  Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown,
  but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, coal, NE, <lookup distinct values>, -
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
  - type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser

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catalog window: cwpneumo
report window: Distribution of coalworkers pneumoconiosis by age & race (% for tables
with row %)
-choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
-saves this report in library: sasuser
- member: (type in name of file you want to save it under)
-choose OK

To calculate prevalence rates of diseases (per 1000)
1. Preparing report data to use in calculation of prevalence rates (for age & race)(used for all
calculations by age and race - do not contain % values)
(calculate prevalence rates by using the following formula:
Everybody that has the certain disease in a certain agegroup/Everybody in that same
agegroup* 1000)

In available tables:
- choose the table sasuser.autagra
- choose OK
In the available columns:
- highlight agegrp, black, white, coloured, unknown by clicking on them
- take over to selected columns by using

- choose black, white, coloured, unknown,
- choose summary functions, count

to add a total column
- choose build a column
- choose summary functions, count, black, +, count, white,+,count, coloured,+,count, unknown, OK
-choose column attributes
- at alias name, type in tot
- at label, type in All races, OK, OK

Choose locals (pull down menu)
- choose where conditions for subset
- from the columns, choose pnumber
- choose other operators, contains
- at the top of all the columns, choose <CONSTANT enter value> and type in 1997. OK, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.agerace
2. Preparing report data for to use in calculation for prevalence rates (everybody with coalworkers pneumoconiosis by age).
   - use the same method as described above for calculating distribution of coalworkers pneumoconiosis by age, but do not include the % columns.

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

NB: all this has been done for 1997 data and saved as sasuser.cpagerac

3. To calculate prevalence rates:
In available tables:
- choose sasuser.agerce, sasuser.pathaut, sasuser.cpagerac
- move these to the selected tables window using the [ ]
In available columns:
- choose agerce.agegrp, cpagerac.count(black), cpagerac.count(white),
  cpagerac.count(coloured), cpagerac.count(unknown), cpagerac.count(tot)
- to build a column
In this column:
- choose summary functions, sum, cpagerac.count(black) / sum, agerce.count(black), *
  <CONSTANT enter value>, type in 1000
- choose OK, OK
In column attributes:
  at Alias name, type in bla
  at format, type in best6.1
  at label, type in biaprev
- choose OK, OK

(do this also for the whites, coloureds, and unknowns)
- go to locals (pull down menu)
- choose where conditions for subset
- choose pathaut.pnumber, other operators, contains, <CONSTANT enter value>, type in 1997, operators, and, agerce.agegrp, EQ, cpagerac.agegrp, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

(Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported seperately to Word Perfect and integrated into a table if desired)

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library, sasuser
member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
(Eg. c:\sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

TABLE 31: DISTRIBUTION & PREVALENCE RATE OF COALWORKERS PNEUMOCONIOSIS BY INDUSTRY & ETHNIC GROUP

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>N</th>
<th>BLACK %</th>
<th>RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>6</td>
<td>100.0%</td>
<td>69.0</td>
</tr>
</tbody>
</table>

IN SAS PROGRAM

1. New variable minetype was created from variable exptype1 to catagorize the types of industries into the following groups:
   - if exptype1=1 then minetype='1'; else
   - if exptype1=2 then minetype='2'; else
   - if exptype1=3 then minetype='3'; else
   - if exptype1=4 then minetype='4'; else
   - if exptype1=5 then minetype='5'; else
   - if exptype1=6 then minetype='6'; else
   - if exptype1=7 or exptype1=10 or exptype1=11 or exptype1=12 or exptype1=13 or exptype1=14 or exptype1=15 or exptype1=16 or exptype1=17 or exptype1=19 or exptype1=20 or exptype1=21 or exptype1=22 or exptype1=23 or exptype1=24 or exptype1=25 or exptype1=26 or exptype1=27 or exptype1=28 or exptype1=29 or exptype1=30 then minetype='7'; else
   - if exptype1=8 then minetype='8'; else
   - if exptype1=9 then minetype='9';

A format has been assigned to the new variable:

```
value minfmt 1='Gold' 2='Coal' 3='Asbestos'
4='Platinum' 5='Copper' 6='Diamond'
7='Other' 8='Iscor' 9='Unknown';
```

format minetype minfmt.
New variable **coal** was created from variable milmac:

if milmac=1 then coal='1'; else
if milmac=2 then coal='2'; else
if milmac=3 then coal='3';

A format has been assigned to the new variable:

value cwpfmt 1='Insignificant collagenisation and related focal emphysema'
2='Significant collagenisation and related focal emphysema'
3='Significant collagenisation without related focal emphysema';

format coal cwpfmt;

New variables were created for the races namely: **black, white, coloured, unknown** from variable **popcode**:

if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;

**IN SAS:**
Choose the Q icon (To go into the SQL Query Window)
The table source is **sasuser**
In **Available Tables** choose the table **sasuser.cwpinra**
- move this table into the **selected tables** window by using the ▶️
- choose OK

In the **available columns** window, choose all the relevant columns (variables) (usually everything up to unknown) (minetype, black, white, coloured, unknown)
- move these to the **selected columns** window by using the ▶️
Highlight black, white, coloured, unknown by clicking on all of them
- go to **summary functions** and choose **count**

To add percentage columns:
- go to **build a column**
- choose **summary functions, count, variable black**
- choose OK
- choose **column attributes**
  - Type in at **Alias name**: bla
  - **Format**: percent15.1
  - **Label**: black%
- choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to **build a column**
- choose **summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), *"<constant enter value>, type in 100
- choose OK
- choose column attributes
- Type in at Alias name: blac
  Format: best4.1
  Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose, summary functions, count, black,+ count,white,+ count, coloured+ count, unknown
- choose OK

- choose column attributes
  - Type in at Alias name: tot
  Format:
  Label: ALL RACES
  - To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, coal, NE, <lookup distinct value>, -
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: cwpneumo
report window: Coalworkers pneumoconiosis by industry & race (r% for tables with row %)

-choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)

-choose OK
TO CHECK
1. Exposure type codes
   where: minetype EQ (check for odd codes)
2. Missing data must be filled in as 9 (unknown). If not, will appear as 0 or -
   where: minetype EQ 0/-

To calculate prevalence rates of diseases (per 1000)
1. Preparing report data to use in calculation of prevalence rates (for industry & race) (used for all calculations by industry and race - do not contain % values) (calculate prevalence rates by using the following formula:
   Everybody that has the certain disease in a certain industry / Everybody in that same industry * 1000)

In available tables:
- choose the table sasuser.autexra
- choose OK
In the available columns:
- highlight minetype, black, white, coloured, unknown by clicking on them
- take over to selected columns by using [ ]

- choose black, white, coloured, unknown,
- choose summary functions, count

to add a total column
- choose build a column
- choose summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, OK
- choose column attributes
- at alias name, type in tot
- at label, type in All races, OK, OK

Choose locals (pull down menu)
- choose where conditions for subset
- from the columns, choose pnumber
- choose other operators, contains
- at the top of all the columns, choose <CONSTANT enter value> and type in 1997. OK, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.indurance

2. Preparing report data for to use in calculation for prevalence rates (everybody with coalworkers pneumoconiosis by industry)
   - use the same method as described above for calculating distribution of coalworkers pneumoconiosis by industry, but do not include the % columns.

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

NB: all this has been done for 1997 data and saved as sasuser.cpindrac

3. To calculate prevalence rates:
In available tables:
- choose sasuser.indurace, sasuser.pathaut, sasuser.cpindrac
- move these to the selected tables window using the [ ]
In available columns:
- choose indurace.agegrp, cpindrac.count(black), cpbindrac.count(white), cpindrac.count(coloured), cpindrac.count(unknown), cpindrac.count(tot)
- to build a column
In this column:
- choose summary functions, sum, cpindrac.count(black) / sum, indurace.count(black) * , <CONSTANT enter value>, type in 1000
- choose OK, OK
In column attributes:
at Alias name, type in bla
at format, type in best6.1
at label, type in biaprev
- choose OK, OK

(do this also for the whites, coloureds. and unknowns)
- go to locals (pull down menu)
- choose where conditions for subset
- choose pathaut.pnumber, other operators, contains, <CONSTANT enter value>, type in 1997, operators, and, indurace.agegrp, EQ, cpindrac.agegrp, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

(Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported seperately to Word Perfect and integrated into a table if desired)

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
member: the file where you saved the data
choose next
delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
(Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

TABLE 32: DISTRIBUTION OF COALWORKERS PNEUMOCONIOSIS
BY EXPOSURE TIME & ETHNIC GROUP

<table>
<thead>
<tr>
<th>SERVICE (YEARS)</th>
<th>BLACK</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-20</td>
<td>1</td>
<td>16.7</td>
</tr>
<tr>
<td>Missing</td>
<td>5</td>
<td>83.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
<td>100.0</td>
</tr>
</tbody>
</table>

IN SAS PROGRAM

1. New variable expyear was created from variable expyear1 to categorize the years of service into the following groups:
   - if expyear1 > 0 and expyear1 < 1 then expyear = "1"; else
   - if expyear1 GE 1 and LE 5.9 then expyear = "2"; else
   - if expyear1 GE 6 and LE 10.9 then expyear = "3"; else
   - if expyear1 GE 11 and LE than 15.9 then expyear = "4"; else
   - if expyear1 GE 16 and LE 20.9 then expyear = "5"; else
   - if expyear1 GE 21 and LE 25.9 then expyear = "6"; else
   - if expyear1 GE 26 and LE 30.9 then expyear = "7"; else
   - if expyear1 > 30.9 then expyear = "8"; else
   - if expyear1 = 0 then expyear = "9";

   A format has been assigned to the new variable:
   value exyfmt 1='<1' 2='1-5' 3='6-10'
   4='11-15' 5='16-20' 6='21-25'
   7='26-30' 8='31+' 9='Missing';
   format expyear exyfmt.;

2. New variable coal was created from variable milmac:
   - if milmac=1 then coal = "1"; else
   - if milmac=2 then coal = "2"; else
   - if milmac=3 then coal = "3";

   A format has been assigned to the new variable:
   value cwfmt 1='Insignificant collagenisation and related focal emphysema'
format coal cwpfmt;

New variables were created for the races namely: \textbf{black, white, coloured, unknown} from variable \textbf{popcode}:
\begin{itemize}
  \item if popcode=1 then Black=1; else
  \item if popcode=2 then White=1; else
  \item if popcode=3 then Coloured=1; else
  \item if popcode=4 then Unknown=1;
\end{itemize}

\textbf{IN SAS:}
Choose the \texttt{Q} icon (To go into the SQL Query Window)
The table source is \texttt{sasuser}
In \textbf{Available Tables} choose the table \texttt{sasuser.cwpextra}
- move this table into the \textbf{selected tables} window by using the \texttt{[} button
- choose \texttt{OK}

In the \textbf{available columns} window, choose all the relevant columns (variables) (usually everything up to unknown) (expyeat, black, white, coloured, unknown)
- move these to the \textbf{selected columns} window by using the \texttt{[} button
Highlight black, white, coloured, unknown by clicking on all of them
- go to \textbf{summary functions} and choose \texttt{count}

To add percentage columns:
- go to \texttt{build a column}
- choose \textbf{summary functions, count}, variable \textbf{black}
- choose \texttt{OK}
- choose \textbf{column attributes}
  - Type in at \texttt{Alias name}: bla
    \begin{itemize}
      \item \texttt{Format}: percent15.1
      \item \texttt{Label}: black\%
    \end{itemize}
- choose \texttt{OK} and do the same for the white (whi), coloured (col) and unknown (unk) columns

To add row percentages:
- go to \texttt{build a column}
- choose \textbf{summary functions, count}, variable \textbf{black, /, operators}, (, \textbf{summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, }, *, <constant enter value>, type in 100
- choose \texttt{OK}
- choose \textbf{column attributes}
- Type in at \texttt{Alias name}: blac
  \begin{itemize}
    \item \texttt{Format}: best4.1
    \item \texttt{Label}: b\%
  \end{itemize}
- choose \texttt{OK} and do the same for white (whi), coloured (col) and unknown (unknow)

To add the total column:
- go to \texttt{build a column}
- choose \textbf{, summary functions, count, black, + count, white, + count, coloured, + count, unknown}
- choose \texttt{OK}
- choose \textbf{column attributes}
- Type in at **Alias name**: tot
  
  **Format:**
  
  **Label**: ALL RACES
  
  - To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it **Alias name**: tota
    
    **Format**: percent15.1
    
    **Label**: tot%

To set conditions:
- go to **Locals** (pull down menu)
  - choose where conditions for subset
  - choose variable prnumber, other operators, contains, <CONSTANT enter value>
    - type in 1997 (to work only with 1997 cases)
  - choose and, coal,NE,<lookup distinct values>,-
  - choose **OK**, **OK**

To run report:
- Choose **Actions** (pull down menu)
  - Choose **Run query, design report, begin with default report, autogroup, yes**

For titles:
- Go to **globals** (pull down menu)
  - choose **options, titles**
  - type in title and close

To choose a predefined report definition:
- Go to **file** (pull down menu)
  - choose **open, report definition**
  - choose in **library** window: sasuser
catalog window: cwpneumo
  report window: Coalworkers pneumoconiosis by exposure time & race (% for tables with row %)
  - choose **OK**

**IN REPORT WINDOW:**
Go to **file** (pull down menu)
- choose save, report data
  - save this report in library: sasuser
    member: (type in name of file you want to save it under)
  - choose **OK**

**TO CHECK**
1. Missing data must be filled in as 9 (missing). If not, will appear as 0 or -
   where: min type EQ 0/-

**EXPORTING FROM SAS:**
Go to **file** (pull down menu)
choose export
choose at **library**: sasuser
  member: the file where you saved the data
choose next
choose *tab delimited file (*.txt), next
choose *browse* and choose where and as what you want the file to be saved in Word Perfect
(Eg. c:\sas\sasuser\filename)
choose *Finish*

**IN WORD PERFECT:**
Go to *File* (pull down menu)
choose *Open*
choose the file you saved the data under in SAS
choose *ASCII (DOS) Text*

Arrange data in a table and *save* as a Word Perfect 6 document.

---

7. **MIXED DUST FIBROSIS**

**TABLE 33: DISTRIBUTION & PREVALENCE RATES OF MIXED DUST FIBROSIS BY AGE & ETHNIC GROUP**

<table>
<thead>
<tr>
<th>AGEGROUP</th>
<th>BLACK</th>
<th>WHITE</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>RATE</td>
</tr>
<tr>
<td>30-39</td>
<td>1</td>
<td>4.8</td>
<td>1.5</td>
</tr>
<tr>
<td>40-49</td>
<td>7</td>
<td>33.3</td>
<td>9.3</td>
</tr>
<tr>
<td>50-59</td>
<td>5</td>
<td>23.8</td>
<td>14.2</td>
</tr>
<tr>
<td>60-69</td>
<td>3</td>
<td>14.3</td>
<td>81.1</td>
</tr>
<tr>
<td>70-79</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>80-89</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>90+</td>
<td>1</td>
<td>4.8</td>
<td>1000.0</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td>19.0</td>
<td>15.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>21</td>
<td>9.4</td>
<td>10</td>
</tr>
</tbody>
</table>

**IN SAS PROGRAM**

1. New variable *agegrp* was created to categorize the ages:
   - if age>0 and age LE 19 then agegrp='0-19'; else
   - if age GE 20 and age LE 29 then agegrp='20-29'; else
   - if age GE 30 and age LE 39 then agegrp='30-39'; else
   - if age GE 40 and age LE 49 then agegrp='40-49'; else
   - if age GE 50 and age LE 59 then agegrp='50-59'; else
   - if age GE 60 and age LE 69 then agegrp='60-69'; else
   - if age GE 70 and age LE 79 then agegrp='70-79'; else
   - if age GE 80 and age LE 89 then agegrp='80-89'; else
   - if age GE 90 then agegrp='90+'; else
   - if age=0 then agegrp='Missing';

New variables were created for the races namely: *black, white, coloured, unknown* from variable *popcode*:
   - if popcode=1 then Black=1; else
   - if popcode=2 then White=1; else
   - if popcode=3 then Coloured=1; else

115
If popcode=4 then Unknown=1;

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.mdfagra
- move this table into the selected tables window by using the ➡
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (agegrp, black, white, coloured, unknown)
- move these to the selected columns window by using the ➡
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
- choose summary functions,count, variable black
- choose OK
- choose column attributes
  - Type in at Alias name: bla
    Format: percent15.1
    Label: black%
- choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
- choose OK
- choose column attributes
  - Type in at Alias name: blac
    Format: best4.1
    Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose , summary functions, count, black, + count,white, + count, coloured, + count, unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
    Format:
    Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%
- choose where conditions for subset
- choose variable prnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, milmdpne, EQ,<lookup distinct values>,1
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: mixdufib
report window: Distribution mixed dust fibrosis by age & race (r% for tables with row%)
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
member: (type in name of file you want to save it under)
- choose OK

To calculate prevalence rates of diseases (per 1000)
1. Preparing report data to use in calculation of prevalence rates (for age & race)(used for all calculations by age and race - do not contain % values)
(calculate prevalence rates by using the following formula:
Everybody that has the certain disease in a certain agegroup/Everybody in that same agegroup * 1000)

In available tables:
- choose the table sasuser.autagra
- choose OK

In the available columns:
- highlight agegrp, black, white, coloured, unknown by clicking on them
- take over to selected columns by using [ ]

- choose black, white, coloured, unknown,
- choose summary functions, count

to add a total column
- choose build a column
- choose summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, OK
- choose column attributes
Choose **locals** (pull down menu)
- choose **where conditions for subset**
- from the columns, choose **pnumber**
- choose **other operators, contains**
- at the top of all the columns, choose `<CONSTANT enter value>` and type in 1997. OK, OK

To run the query:
- choose **actions** (pull down menu)
- choose **design report, begin with default report, autogroup, yes**

When in report window
- choose **file** (pull down menu), **save, report data**
- at **library**, type in **sasuser**
- at **member**, type in the filename to save under

*NB: all this has been done for 1997 data and saved as sasuser.agerate*

2. Preparing report data for to use in calculation for prevalence rates (everybody with mixed dust fibrosis by age)
   - use the same method as described above for calculating distribution of mixed dust fibrosis by age, but do not include the % columns.

When in report window
- choose **file** (pull down menu), **save, report data**
- at **library**, type in **sasuser**
- at **member**, type in the filename to save under

*NB: all this has been done for 1997 data and saved as sasuser.mdfagera*

3. **To calculate prevalence rates:**

In available tables:
- choose **sasuser.agerate, sasuser.pathaut, sasuser.mdfagera**
- move these to the selected tables window using the ✡

In available columns:
- choose **agerace.agegrp, mdfagera.count(black), mdfagera.count(white), mdfagera.count(coloured), mdfagera.count(unknown), mdfagera.count(tot)**
- to **build a column**

In this column:
- choose **summary functions, sum, mdfagera.count(black) / sum, agerace.count(black),**, `<CONSTANT enter value>`, type in 1000
- choose **OK, OK**

In column attributes:
- at Alias name, type in **bla**
- at format, type in **best6.1**
- at label, type in **blaprev**
- choose **OK,OK**

*(do this also for the whites, coloureds, and unknowns)*
- go to **locals** (pull down menu)
- choose **where conditions for subset**
- choose **pathaut.pnumber, other operators, contains, <CONSTANT enter value>**, type in 1997,
operators, and, agerace.agegrp, EQ, mdfagera.agegrp, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

(Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported seperately to Word Perfect and integrated into a table if desired)

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
  member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
  (Eg. c:\sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

---

TABLE 34: DISTRIBUTION & PREVALENCE RATES OF MIXED DUST FIBROSIS
BY INDUSTRY & ETHNIC GROUP

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>BLACK</th>
<th>WHITE</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>RATE</td>
</tr>
<tr>
<td>Gold</td>
<td>19</td>
<td>90.5</td>
<td>10.9</td>
</tr>
<tr>
<td>Coal</td>
<td>1</td>
<td>4.8</td>
<td>11.5</td>
</tr>
<tr>
<td>Copper</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>4.8</td>
<td>11.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>21</td>
<td>9.4</td>
<td></td>
</tr>
</tbody>
</table>

IN SAS PROGRAM
1 New variable minetype was created from variable exptype1 to catagorize the types of industries into the following groups:
   if exptype1=1 then minetype='1'; else
if exptype1=2 then minetype='2'; else
if exptype1=3 then minetype='3'; else
if exptype1=4 then minetype='4'; else
if exptype1=5 then minetype='5'; else
if exptype1=6 then minetype='6'; else
if exptype1=7 or exptype1=10 or exptype1=11 or exptype1=12 or exptype1=13 or exptype1=14 or exptype1=15 or exptype1=16 or exptype1=17 or exptype1=19 or exptype1=20 or exptype1=21 or exptype1=22 or exptype1=23 or exptype1=24 or exptype1=25 or exptype1=26 or exptype1=27 or exptype1=28 or exptype1=29 or exptype1=30 then minetype='7'; else
if exptype1=8 then minetype='8'; else
if exptype1=9 then minetype='9';

A format has been assigned to the new variable:
value minfmt 1='Gold' 2='Coal' 3='Asbestos'
 4='Platinum' 5='Copper' 6='Diamond'
 7='Other' 8='Iron' 9='Unknown';

format minetype minfmt.

N7 (Other) includes:
Quarry, Silica (Silicon smelters), Manganese, Steel, Tin, Zinc, Minerals, Chrome, Construction,
S A Railways, Industry, Iron (put together as there are too few cases in theses industries)

New variables were created for the races namely: black, white, coloured, unknown from variable
popcode:
if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.mdfluna
- move this table into the selected tables window by using the ▼
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up
to unknown) (minetype, black, white, coloured, unknown)
- move these to the selected columns window by using the ▼
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
-choose summary functions,count, variable black
- choose OK
- choose column attributes
- Type in at Alias name: bla
  Format: percent15.1

120
Label: black%
- choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
- choose OK
- choose column attributes
- Type in at Alias name: blac
  Format: best4.1
  Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose , summary functions, count, black, + count, white, + count, coloured + count, unknown
- choose OK
- choose column attributes
- Type in at Alias name: tot
  Format:
  Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, milimdpe, EQ,<lookup distinct values>1
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
-Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: mixdufib
  report window: Mixed dust fibrosis by industry & race (% for tables with row %)
-choose OK
IN REPORT WINDOW:
- Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
- choose OK

TO CHECK
1 Exposure type codes
   where: minetype EQ (check for odd codes)
2 Missing data must be filled in as 9 (unknown). If not, will appear as 0 or -
   where: minetype EQ 0/-

To calculate prevalence rates of diseases (per 1000)
1. Preparing report data to use in calculation of prevalence rates (for industry & race) (used for
   all calculations by industry and race - do not contain % values)
   (calculate prevalence rates by using the following formula:
   Everybody that has the certain disease in a certain industry/Everybody in that same industry
   * 1000)

In available tables:
- choose the table sasuser.autextra
- choose OK
In the available columns:
- highlight minetype, black, white, coloured, unknown by clicking on them
- take over to selected columns by using []
- choose black, white, coloured, unknown
- choose summary functions, count

To add a total column
- choose build a column
- choose summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, OK
- choose column attributes
- at alias name, type in tot
- at label, type in All races, OK, OK

Choose locals (pull down menu)
- choose where conditions for subset
- from the columns, choose pnumber
- choose other operators, contains
- at the top of all the columns, choose <CONSTANT enter value> and type in 1997. OK, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.indurace
2. Preparing report data for use in calculation for prevalence rates (everybody with mixed dust fibrosis by industry)
   - use the same method as described above for calculating distribution of mixed dust fibrosis by industry, but do not include the % columns.

   When in report window
   - choose file (pull down menu), save, report data
   - at library, type in sasuser
   - at member, type in the filename to save under
   NB: all this has been done for 1997 data and saved as sasuser.mdfindra

3. To calculate prevalence rates:
   In available tables:
   - choose sasuser.indurace, sasuser.pathaut, sasuser.mdfindra
   - move these to the selected tables window using the 
   In available columns:
   - choose indurace.agegrp, mdfindra.count(black), mdfindra.count(white), mdfindra.count(coloured), mdfindra.count(unknown), mdfindra.count(101)
   - to build a column
   In this column:
   - choose summary functions, sum, mdfindra.count(black) / sum, indurace.count(black),", <CONSTANT T enter value>, type in 1000
   - choose OK, OK
   In column attributes:
   at Alias name, type in bla
   at format, type in best.1
   at label, type in blaprev
   - choose OK, OK

   (do this also for the whites, coloureds, and unknowns)
   - go to locals (pull down menu)
   - choose where conditions for subset
   - choose pathaut.pnumber, other operators, contains, <CONSTANT enter value>, type in 1997, operators, and, indurace.agegrp, EQ, mdfindra.agegrp, OK

   To run the query:
   - choose actions (pull down menu)
   - choose design report, begin with default report, autogroup, yes

   When in report window
   - choose file (pull down menu), save, report data
   - at library, type in sasuser
   - at member, type in the filename to save under

   (Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported separately to Word Perfect and integrated into a table if desired)

**EXPORTING FROM SAS:**
Go to file (pull down menu)
choose export
choose at library: sasuser
member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
(Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

### TABLE 35: DISTRIBUTION OF MIXED DUST FIBROSIS BY EXPOSURE TIME & ETHNIC GROUP

<table>
<thead>
<tr>
<th>SERVICE (YEARS)</th>
<th>BLACK</th>
<th>WHITE</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>6-10</td>
<td>1</td>
<td>4.8</td>
<td>0</td>
</tr>
<tr>
<td>11-15</td>
<td>5</td>
<td>23.8</td>
<td>0</td>
</tr>
<tr>
<td>16-20</td>
<td>4</td>
<td>19.0</td>
<td>3</td>
</tr>
<tr>
<td>21-25</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
</tr>
<tr>
<td>26-30</td>
<td>2</td>
<td>9.5</td>
<td>2</td>
</tr>
<tr>
<td>31+</td>
<td>1</td>
<td>4.8</td>
<td>3</td>
</tr>
<tr>
<td>Missing</td>
<td>8</td>
<td>38.1</td>
<td>0</td>
</tr>
</tbody>
</table>

TOTAL 21 10 31 100.0

IN SAS PROGRAM

1 New variable expyear was created from variable expyear1 to categorize the types of service into the following groups:
   if expyear1>0 and expyear1 < 1 then expyear='1';
   else if expyear1 GE 1 and LE 5.9 then expyear='2';
   else if expyear1 GE 6 and LE 10.9 then expyear='3';
   else if expyear1 GE 11 and LE 15.9 then expyear='4';
   else if expyear1 GE 16 and LE 20.9 then expyear='5';
   else if expyear1 GE 21 and LE 25.9 then expyear='6';
   else if expyear1 GE 26 and LE 30.9 then expyear='7';
   else if expyear1 >30.9 then expyear='8';
   else expyear1=0 then expyear='9';

A format has been assigned to the new variable:
value expfmt 1='<1'
            2='1-5'
            3='6-10'
            4='11-15'
            5='16-20'
            6='21-25'
            7='26-30'
            8='31+'
            9='Missing';

format expyear expfmt.;

New variables were created for the races namely: black, white, coloured, unknown from variable popcode:
if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.mdfextra
- move this table into the selected tables window by using the
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (expyear, black, white, coloured, unknown)
- move these to the selected columns window by using the
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
- choose summary functions, count, variable black
- choose OK
- choose column attributes
  - Type in at Alias name: blal
    Format: percent15.1
    Label: black%
  - choose OK and do the same for the white (wh), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
- choose OK
- choose column attributes
  - Type in at Alias name: blac
    Format: best4.1
    Label: b%
  - choose OK and do the same for white (whf), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose, summary functions, count, black, + count, white, + count, coloured, + count, unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
    Format:
    Label: ALL RACES
  - To add a % column for the total column, do the same as for black, white, coloured, unknown,
  but call it Alias name: tota
    Format: percent15.1
    Label: tot%
To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable prnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, milmpnpe, EQ,<lookup distinct values>, 1
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: mixduflb
  report window: Mixed dust fibrosis by exposure time & race (% for tables with row %)
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member. (type in name of file you want to save it under)
- choose OK

TO CHECK
1  Missing data must be filled in as 9 (missing). If not, will appear as 0 or -
   where: minetype EQ 0/-

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
  member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
  (Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open

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choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

8. ASBESTOSIS

| TABLE 36: DISTRIBUTION OF ASBESTOSIS BY ETHNIC GROUP |
|---------------------------------|-----|------|------|------|
| | BLACK | | WHITE | | COLOURED | | ALL RACES |
| | N | % | N | % | N | % | N | % |
| Slight Interstitial fibrosis | 8 | 40.0 | 6 | 75.0 | 11 | 47.8 | 25 | 49.0 |
| Moderate Interstitial fibrosis | 8 | 40.0 | 2 | 25.0 | 10 | 43.5 | 20 | 39.2 |
| Marked Interstitial fibrosis | 4 | 20.0 | 0 | 0.0 | 2 | 8.7 | 6 | 11.8 |
| TOTAL | 20 | | 8 | | 23 | | 51 | 100.0 |

IN SAS PROGRAM
New variables were created for asbestos:

```
1 asbestos from milferb:
    if milferb=3 then asbestos='3'; else
    if milferb=4 then asbestos='4'; else
    if milferb=5 then asbestos='5';

A format was assigned for this variable:
value asbfmt 3='Slight Interstitial fibrosis'
4='Moderate interstitial fibrosis'
5='Marked interstitial fibrosis';

format asbestos asbfmt.;
```

New variables were created for the races namely: black, white, coloured, unknown from variable popcode:

```
if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;
```

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.asbrace
- move this table into the selected tables window by using the [ ]
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (asbestos, black, white, coloured, unknown)
- move these to the selected columns window by using the [ ]
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
- choose summary functions, count, variable black
- choose OK
- choose column attributes
  - Type in at Alias name: bla
    Format: percent15.1
    Label: black%
- choose OK and do the same for the white (whi), coloured (col) and unknown (unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), °, constant enter value>, type in 100
- choose OK
- choose column attributes
  - Type in at Alias name: blac
    Format: best4.1
    Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose , summary functions, count, black, + count, white, + count, coloured, + count, unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
    Format:
    Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close
To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
  catalog window: asbes
  report window: Asbestosis by race (r% for tables with row %)
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
- choose OK

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
  member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
(Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

### TABLE 37: DISTRIBUTION OF ASBESTOSIS BY AGE AND ETHNIC GROUP

<table>
<thead>
<tr>
<th>AGEGROUP</th>
<th>BLACK</th>
<th>WHITE</th>
<th>COLOURED</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>30-39</td>
<td>1</td>
<td>5.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>40-49</td>
<td>2</td>
<td>10.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>50-59</td>
<td>9</td>
<td>45.0</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>60-69</td>
<td>3</td>
<td>15.0</td>
<td>4</td>
<td>50.0</td>
</tr>
<tr>
<td>70-79</td>
<td>2</td>
<td>10.0</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>80-89</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>15.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20</td>
<td></td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

IN SAS PROGRAM

New variables were created for asbestosis:


1  asbgener from milferb:
   if milferb=3 or milferb=4 or milferb=5 then asbgener='1';

2  agegrp to categorize the ages:
   if age=0 and age LE 19 then agegrp='0-19 '; else
   if age GE 20 and age LE 29 then agegrp='20-29'; else
   if age GE 30 and age LE 39 then agegrp='30-39'; else
   if age GE 40 and age LE 49 then agegrp='40-49'; else
   if age GE 50 and age LE 59 then agegrp='50-59'; else
   if age GE 60 and age LE 69 then agegrp='60-69'; else
   if age GE 70 and age LE 79 then agegrp='70-79'; else
   if age GE 80 and age LE 89 then agegrp='80-89'; else
   if age GE 90 then agegrp='90+'; else
   if age=0 then agegrp='Missing';

New variables were created for the races namely: black, white, coloured, unknown from variable popcode:
   if popcode=1 then Black=1; else
   if popcode=2 then White=1; else
   if popcode=3 then Coloured=1; else
   if popcode=4 then Unknown=1;

IN SAS:
Choose the Q Icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.asbagra
- move this table into the selected tables window by using the 
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (agegrp, black, white, coloured, unknown)
- move these to the selected columns window by using the 
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
  - choose summary functions,count, variable black
  - choose OK
  - choose column attributes
    - Type in at Alias name: bla
      Format: percent15.1
      Label: black%
  - choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
  - choose summary functions, count, variable black, /, operators, (, summary functions, count, black,
  +, count, white, +, count, coloured, +, count, unknown, ), * <constant enter value>, type in 100
  - choose OK
  - choose column attributes
  - Type in at Alias name: blac
Format: best4.1
Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknow)

To add the total column:
- go to build a column
- choose , summary functions, count, black,+ count,white,+ count,coloured+ count,unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
    Format:
    Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, asbgener, EQ,<lookup distinct values>, 1
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
-Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: asbes
report window: Asbestosis by age & race (1% for tables with row %)
choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
-choose OK
To calculate prevalence rates of diseases (per 1000)

1. Preparing report data to use in calculation of prevalence rates (for age & race) (used for all calculations by age and race - do not contain % values) (calculate prevalence rates by using the following formula: Everybody that has the certain disease in a certain agegroup/Everybody in that same agegroup * 1000)

In available tables:
- choose the table sasuser.autagra
- choose OK
In the available columns:
- highlight agegrp, black, white, coloured, unknown by clicking on them
- take over to selected columns by using [ ]

- choose black, white, coloured, unknown,
- choose summary functions, count

to add a total column
- choose build a column
- choose summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, OK
- choose column attributes
- at alias name, type in tot
- at label, type in All races, OK, OK

Choose locals (pull down menu)
- choose where conditions for subset
- from the columns, choose pnumber
- choose other operators, contains
- at the top of all the columns, choose <CONSTANT enter value> and type in 1997. OK, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.agerace

2. Preparing report data for to use in calculation for prevalence rates (everybody with asbestosis by age)
- use the same method as described above for calculating distribution of asbestosis by age, but do not include the % columns.

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.asbagera
3. To calculate prevalence rates:
In available tables:
- choose sasuser.aerace, sasuser.pathaut, sasuser.asbagera
- move these to the selected tables window using the 
In available columns:
- choose aerace.agegrp, asbagera.count(black), asbagera.count(white),
asbagera.count(coloured), asbagera.count(unknown), asbagera.count(tot)
- to build a column
In this column:
- choose summary functions, sum, asbagera.count(black) / sum, aerace.count(black), *, <CONSTANT T
enter value>, type in 1000
- choose OK, OK
In column attributes:
at Alias name, type in bla
at format, type in best6.1
at label, type in blaprev
- choose OK,OK

(do this also for the whites, coloureds. and unknowns)
- go to locals (pull down menu)
- choose where conditions for subset
- choose pathaut.pnumber, other operators, contains, <CONSTANT enter value>, type in 1997,operators, and, aerace.agegrp, EQ, asbagera.agegrp, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

(Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, andtherefore these data must be exported seperately to Word Perfect and integrated into a table if desired)

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
    member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
    (Eg. c:\sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS

choose **ASCII (DOS) Text**

Arrange data in a table and **save** as a Word Perfect 6 document.

---

**TABLE 38: DISTRIBUTION OF ASBESTOSIS BY INDUSTRY & ETHNIC GROUP**

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>BLACK</th>
<th>WHITE</th>
<th>COLOURED</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Asbestos</td>
<td>4</td>
<td>20.0</td>
<td>2</td>
<td>25.0</td>
</tr>
<tr>
<td>Gold</td>
<td>6</td>
<td>40.0</td>
<td>3</td>
<td>37.5</td>
</tr>
<tr>
<td>Platinum</td>
<td>3</td>
<td>15.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Copper</td>
<td>1</td>
<td>5.0</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Iscor</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>25.0</td>
</tr>
<tr>
<td>Coal</td>
<td>1</td>
<td>5.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>5.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
<td>10.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>20</td>
<td>8</td>
<td>23</td>
<td>51</td>
</tr>
</tbody>
</table>

---

**IN SAS PROGRAM**

1. New variable **asbgener** was created from miflertb:
   
   ```
   if miflertb=3 or miflertb=4 or miflertb=5 then asbgener='1';
   ```

2. New variable **minetype** was created from variable exptype1 to categorize the types of industries into the following groups:
   
   ```
   if exptype1=1 then minetype='1'; else
   if exptype1=2 then minetype='2'; else
   if exptype1=3 then minetype='3'; else
   if exptype1=4 then minetype='4'; else
   if exptype1=5 then minetype='5'; else
   if exptype1=6 then minetype='6'; else
   if exptype1=7 or exptype1=10 or exptype1=11 or exptype1=12 or exptype1=13 or exptype1=14 or exptype1=15 or exptype1=16 or exptype1=17 or exptype1=19 or exptype1=20 or exptype1=21 or exptype1=22 or exptype1=23 or exptype1=24 or exptype1=25 or exptype1=26 or exptype1=27 or exptype1=28 or exptype1=29 or exptype1=30 then minetype='7'; else
   if exptype1=8 then minetype='8'; else
   if exptype1=9 then minetype='9';
   ```

A format has been assigned to the new variable:

```
value minfmt 1='Gold'
4='Platinum'
7='Other'
2='Coal'
5='Copper'
8='Iscor'
3='Asbestos'
6='Diamond'
9='Unknown';
```

format minetype minfmt.

---

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Nr7 (Other) includes:
Quarry, Silica (Silicon smelters), Manganese, Steel, Tin, Zinc, Minerals, Chrome, Construction,
S A Railways, Industry, Iron (put together as there are too few cases in theses industries)

New variables were created for the races namely: black, white, coloured, unknown from variable
popcode:
if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.asbinra
- move this table into the selected tables window by using the E
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up
to unknown) (minitese, black, white, coloured, unknown)
- move these to the selected columns window by using the E
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
- choose summary functions, count, variable black
- choose OK
- choose column attributes
  - Type in at Alias name: bla
    Format: percent15.1
    Label: black%
- choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black,
  +, count, white, +, count, coloured, +, count, unknown, ), <constant enter value>, type in 100
- choose OK
- choose column attributes
- Type in at Alias name: blac
  Format: best4.1
  Label: b%
- choose OK and do the same for white (whi), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose , summary functions, count, black, + count, white, + count, coloured, + count, unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
Format:
Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tota%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose and, asbgener, EQ, <lookup distinct values>, 1
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
-Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: asbes
  report window: Asbestosis by industry & race (r% for tables with row %)
-choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
  - save this report in library: sasuser
    member: (type in name of file you want to save it under)
-choose OK

TO CHECK
1 Exposure type codes
   where: minetype EQ (check for odd codes)
2 Missing data must be filled in as 9 (unknown). If not, will appear as 0 or -
   where: minetype EQ 0/-
3 Where a high percentage of cases with asbestosis came from other (in this case, gold) industries:
   where black=1 and pnumber contains 1997 and asbgener=1 and minetype=gold
   (do the same for white)

Ask for the pnumber, exptype1, exptype2, exptype3, exptype4
To calculate prevalence rates of diseases (per 1000)

1. Preparing report data to use in calculation of prevalence rates (for industry & race) (used for all calculations by industry and race - do not contain % values)
   (calculate prevalence rates by using the following formula:
   Everybody that has the certain disease in a certain industry / Everybody in that same industry * 1000)

In available tables:
- choose the table sasuser.autexra
- choose OK

In the available columns:
- highlight minetype, black, white, coloured, unknown by clicking on them
- take over to selected columns by using [ ]

- choose black, white, coloured, unknown,
- choose summary functions, count

to add a total column
- choose build a column
- choose summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, OK
- choose column attributes
- at alias name, type in tot
- at label, type in All races, OK, OK

Choose locals (pull down menu)
- choose where conditions for subset
- from the columns, choose prnumber
- choose other operators, contains
- at the top of all the columns, choose <CONSTANT enter value> and type in 1997, OK, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

NB: all this has been done for 1997 data and saved as sasuser.indurace

2. Preparing report data for to use in calculation for prevalence rates (everybody with asbestososis by industry)
   - use the same method as described above for calculating distribution of asbestososis by industry, but do not include the % columns.

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

NB: all this has been done for 1997 data and saved as sasuser.asbindra
3. To calculate prevalence rates:

   In available tables:
   - choose `sasuser.indurace`, `sasuser.pathaut`, `sasuser.asbindra`
   - move these to the selected tables window using the
   
   In available columns:
   - choose `indurace.agedgrp`, `asbindra.count(black)`, `asbindra.count(white)`, `asbindra.count(coloured)`,
   `asbindra.count(unknown)`, `asbindra.count(tot)`
   - to build a column
   
   In this column:
   - choose `summary functions`, `sum`, `asbindra.count(black) / sum, indurace.count(black)"`, `<CONSTANT enter value>, type in 1000`
   - choose OK, OK
   
   In column attributes:
   - at Alias name, type in `bla`
   - at format, type in `best.6.1`
   - at label, type in `biaprev`
   - choose OK, OK

   (do this also for the whites, coloureds. and unknowns)
   - go to `locals` (pull down menu)
   - choose `where conditions for subset`
   - choose `pathaut.pnumber, other operators, contains, <CONSTANT enter value>, type in 1997, operators, and, indurace.agedgrp, EQ, asbindra.agedgrp, OK`

   To run the query:
   - choose `actions` (pull down menu)
   - choose `design report, begin with default report, autogroup, yes`

   When in report window
   - choose `file` (pull down menu), `save, report data`
   - at `library`, type in `sasuser`
   - at `member`, type in the filename to save under

   (Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported seperately to Word Perfect and integrated into a table if desired)

**EXPORTING FROM SAS:**

   Go to `file` (pull down menu)
   choose `export`
   choose at `library`; `sasuser`
   `member`; the file where you saved the data
   `next`
   choose `tab delimited file (*.txt), next`
   choose `browse` and choose where and as what you want the file to be saved in Word Perfect
   (Eg. `c:sas\sasuser\filename`)
   choose Finish

**IN WORD PERFECT:**

   Go to `File` (pull down menu)
   choose `Open`
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

<table>
<thead>
<tr>
<th>TABLE 39: DISTRIBUTION OF ASBESTOSIS BY EXPOSURE TIME &amp; ETHNIC GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE (YEARS)</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1-5</td>
</tr>
<tr>
<td>6-10</td>
</tr>
<tr>
<td>11-15</td>
</tr>
<tr>
<td>16-20</td>
</tr>
<tr>
<td>21-25</td>
</tr>
<tr>
<td>26-30</td>
</tr>
<tr>
<td>31+</td>
</tr>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

IN SAS PROGRAM

1. New variable asbgener was created from milfert:
   if milfert=3 or milfert=4 or milfert=5 then asbgener='1';

2. New variable expyear was created from variable expyear1 to categorize the types years of service into the following groups:
   if expyear1>0 and expyear1 < 1 then expyear='1'; else
   if expyear1 GE 1 and LE 5.9 then expyear='2'; else
   if expyear1 GE 6 and LE 10.9 then expyear='3'; else
   if expyear1 GE 11 and LE 15.9 then expyear='4'; else
   if expyear1 GE 16 and LE 20.9 then expyear='5'; else
   if expyear1 GE 21 and LE 25.9 then expyear='6'; else
   if expyear1 GE 26 and LE 30.9 then expyear='7'; else
   if expyear1 >30.9 then expyear='8'; else
   if expyear1=0 then expyear='9';

   A format has been assigned to the new variable:
   value expfmt 1='1' 2='1-5' 3='6-10'
   4='11-15' 5='16-20' 6='21-25'
   7='26-30' 8='31+' 9='Missing';

   format expyear expfmt; 

   New variables were created for the races namely: black, white, coloured, unknown from variable popcode:
   if popcode=1 then Black=1; else
   if popcode=2 then White=1; else
   if popcode=3 then Coloured=1; else
   if popcode=4 then Unknown=1;
IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.asbexra
- move this table into the selected tables window by using the [ ]
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (expyear, black, white, coloured, unknown)
- move these to the selected columns window by using the [ ]
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
- choose summary functions, count, variable black
- choose OK
- choose column attributes
- Type in at Alias name: bla
  Format: percent15.1
  Label: black%
- choose OK and do the same for the white (whi), coloured (col) and unknown (unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black,
  +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
- choose OK
- choose column attributes
- Type in at Alias name: blac
  Format: best4.1
  Label: b%
- choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose , summary functions, count, black, + count, white, + count, coloured, + count, unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
    Format:
    Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
- type in 1997 (to work only with 1997 cases)
- choose and, asbgener, EQ, <lookup distinct values>, 1
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: asbes
report window: Asbestosis by exposure time & race (% for tables with row %)
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
- choose OK

TO CHECK
1 Missing data must be filled in as 9 (missing). If not, will appear as 0 or
  where: minetype EQ 0/

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
  member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
  (Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.
TABLE 40: ASBESTOSIC PLAQUES BY ETHNIC GROUP

<table>
<thead>
<tr>
<th></th>
<th>BLACK</th>
<th>WHITE</th>
<th>COLOURED</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestotic plaques</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

In the SAS programme
New variables were created for asbestos:

```sas
1    asbplaq  from mapasl & mapasbr:
    if mapasl=1 or mapasbr=1 then asbplaq='1';
A format was assigned for this variable:
    value aspfmt = 'Asbestotic plaques';
format asbplaq aspfmt.;
```

New variables were created for the races namely: black, white, coloured, unknown from variable `popcode`:

```sas
if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;
```

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is `sasuser`
In Available Tables choose the table `sasuser.asbpplaq`
- move this table into the selected tables window by using the [ ]
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (asbplaq, black, white, coloured, unknown)
- move these to the selected columns window by using the [ ]
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
- choose summary functions, count, variable black
- choose OK
- choose column attributes
  - Type in at Alias name: bla
    Format: percent15.1
    Label: black%
- choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
- choose OK
- choose column attributes
- Type in at ** Alias name: blac**
  - **Format: best4.1**
  - **Label: b%**

- choose **OK** and do the same for white (whit), coloured (colour) and unknown (unknow)

To add the total column:
- go to **build a column**
- choose **summary functions, count, black, count,white, count, coloured, count, unknown**
- choose **OK**
- choose **column attributes**
  - **Type in at Alias name: tot**
    - **Format:**
    - **Label: ALL RACES**
  - To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it **Alias name: tota**
    - **Format: percent15.1**
    - **Label: tot%**

To set conditions:
- go to **Locals** (pull down menu)
- choose where conditions for subset
- choose variable **number, other operators, contains, <CONSTANT enter value>**
  - type in **1997** (to work only with 1997 cases)
- choose **OK, OK**

To run report
- Choose **Actions** (pull down menu)
- Choose **Run query, design report, begin with default report, autogroup, yes**

For titles:
- Go to **globals** (pull down menu)
- choose **options, titles**
- type in title and **close**

To choose a predefined report definition:
- Go to **file** (pull down menu)
- choose **open, report definition**
- choose in **library window: sasuser**
  - **catalog window: asbes**
  - report window: **Asbestotic pleural plaques by race** (r% for tables with row %)
- choose **OK**

**IN REPORT WINDOW:**
 Go to **file** (pull down menu)
- choose **save, report data**
- save this report in library: **sasuser**

 member: (type in name of file you want to save it under)

- choose **OK**

**EXPORTING FROM SAS:**
 Go to **file** (pull down menu)
 choose **export**
choose at library: sasuser
    member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
    (Eg. c:\sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

9. EMPHYSEMA

<table>
<thead>
<tr>
<th>TABLE 41: SEVERITY OF EMPHYSEMA BY ETHNIC GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Insignificant</td>
</tr>
<tr>
<td>Moderate</td>
</tr>
<tr>
<td>Marked</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

IN SAS PROGRAM
New variable was created for the severity of emphysema, namely: emphysem from the variable
malemsco:
    if malemsco=2 then emphysem='2'; else
    if malemsco=3 then emphysem='3'; else
    if malemsco=4 then emphysem='4';

A format was assigned to this variable:

    value empfmt 2='Insignificant'
    3='Moderate'
    4='Marked';

Format emphysem empfmt.

New variables were created for the races namely: black, white, coloured, unknown from variable
popcode:
    if popcode=1 then Black=1; else
    if popcode=2 then White=1; else
    if popcode=3 then Coloured=1; else
    if popcode=4 then Unknown=1;
IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.empsevra
  - move this table into the selected tables window by using the  
  - choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up
to unknown) (emphysem, black, white, coloured, unknown)
  - move these to the selected columns window by using the  
  Highlight black, white, coloured, unknown by clicking on all of them
  - go to summary functions and choose count

To add percentage columns:
  - go to build a column
  - choose summary functions.count, variable black
  - choose OK
  - choose column attributes
    - Type in at Alias name: bla
      Format: percent15.1
      Label: black%
  - choose OK and do the same for the white (whi), coloured (col) and unknown (unk) columns

To add row percentages:
  - go to build a column
  - choose summary functions, count, variable black, /, operators, (, summary functions, count, black,
    +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
  - choose OK
  - choose column attributes
    - Type in at Alias name: blac
      Format: best4.1
      Label: b%
  - choose OK and do the same for white (whi), coloured (colour) and unknown (unknown)

To add the total column:
  - go to build a column
  - choose, summary functions, count, black, + count, white, + count, coloured, + count, unknown
  - choose OK
  - choose column attributes
    - Type in at Alias name: tot
      Format:
      Label: ALL RACES
  - To add a % column for the total column, do the same as for black, white, coloured, unknown,
    but call it Alias name: tota
      Format: percent15.1
      Label: tota%

To set conditions:
  - go to Locals (pull down menu)
  - choose where conditions for subset
  - choose variable pnumber, other operators, contains, <CONSTANT enter value>
- type in 1997 (to work only with 1997 cases)
- choose operators, and, emphysem, NE, lookup distinct values,
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catalog window: emphyse
report window: Severity of emphysema by race
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
- choose OK

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
  member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
  (Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.
TABLE 42: DISTRIBUTION OF EMPHYSEMA BY AGE & ETHNIC GROUP

<table>
<thead>
<tr>
<th>AGEGROUP</th>
<th>BLACK</th>
<th>WHITE</th>
<th>COLOURED</th>
<th>ALL RACES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>20-29</td>
<td>6</td>
<td>2.3</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>30-39</td>
<td>57</td>
<td>22.0</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>40-49</td>
<td>100</td>
<td>38.6</td>
<td>19</td>
<td>6.0</td>
</tr>
<tr>
<td>50-59</td>
<td>62</td>
<td>23.9</td>
<td>53</td>
<td>16.7</td>
</tr>
<tr>
<td>60-69</td>
<td>12</td>
<td>4.6</td>
<td>101</td>
<td>31.9</td>
</tr>
<tr>
<td>70-79</td>
<td>1</td>
<td>0.4</td>
<td>89</td>
<td>28.1</td>
</tr>
<tr>
<td>80-89</td>
<td>0</td>
<td>0.0</td>
<td>49</td>
<td>15.5</td>
</tr>
<tr>
<td>90+</td>
<td>1</td>
<td>0.4</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Missing</td>
<td>20</td>
<td>7.7</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>259</td>
<td>317</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

IN SAS PROGRAM

New variable was created for the severity of emphysema, namely: `emphysem` from the variable `malemsco`:

if malemsco=2 then emphysem='2';
if malemsco=3 then emphysem='3';
if malemsco=4 then emphysem='4';

a format was assigned to this variable:

value empfm2='Insignificant'
3='Moderate'
4='Marked';

format emphysem empfm2.

New variable `agegrp` was created from variable `age` to categorize ages into the following groups:

if age>0 and age LE 19 the agegrp='0-19';
if age GE 20 and age LE 29 then agegrp='20-29';
if age GE 30 and age LE 39 then agegrp='30-39';
if age GE 40 and age LE 49 then agegrp='40-49';
if age GE 50 and age LE 59 then agegrp='50-59';
if age GE 60 and age LE 69 then agegrp='60-69';
if age GE 70 and age LE 79 then agegrp='70-79';
if age GE 80 and age LE 89 then agegrp='80-89';
if age GE 90 then agegrp='90+';
if age=0 then agegrp='Missing';

New variables were created for the races namely: `black`, `white`, `coloured`, `unknown` from variable `popcode`:

if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;

IN SAS:

Choose the Q icon (To go into the SQL Query Window)
The table source is `sasuser`
In **Available Tables** choose the table **sasuser.empagra**
- move this table into the **selected tables** window by using the □
- choose OK

In the **available columns** window, choose all the relevant columns (variables) (usually everything up to unknown) (agegrp, black, white, coloured, unknown)
- move these to the **selected columns** window by using the □
Highlight black, white, coloured, unknown by clicking on all of them
- go to **summary functions** and choose **count**

To add percentage columns:
- go to **build a column**
- choose **summary functions**, **count**, variable **black**
- choose OK
- choose **column attributes**
  - Type in at **Alias name**: bla
    - **Format**: percent15.1
    - **Label**: black%
  - choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to **build a column**
- choose **summary functions**, **count**, variable **black**, /, **operators**, (, **summary functions**, **count**, **black**, +, **count**, **white**, +, **count**, **coloured**, +, **count**, **unknown** ), *, **<constant enter value>**, type in 100
- choose OK
- choose **column attributes**
  - Type in at **Alias name**: blac
    - **Format**: best4.1
    - **Label**: b%
  - choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to **build a column**
- choose , **summary functions**, **count**, **black**, + **count**, **white**, + **count**, **coloured**+ **count**, **unknown**
- choose OK
- choose **column attributes**
  - Type in at **Alias name**: tot
    - **Format**: 
    - **Label**: ALL RACES
  - To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it **Alias name**: tota
    - **Format**: percent15.1
    - **Label**: tot%

To set conditions:
- go to **Locals** (pull down menu)
- choose where conditions for subset
- choose variable **pnumber**, **other operators**, contains, **<CONSTANT enter value>**
  - type in 1997 (to work only with 1997 cases)
- choose **operators**, and, **emphysem**, **NE**, **<lookup distinct values>**
- choose OK, OK
To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close

To choose a predefined report definition:
- Go to file (pull down menu)
- choose open, report definition
- choose in library window: sasuser
catelog window: emphyse
report window: Distribution of emphysema by age & race
- choose OK

IN REPORT WINDOW:
Go to file (pull down menu)
- choose save, report data
- save this report in library: sasuser
  member: (type in name of file you want to save it under)
- choose OK

To calculate prevalence rates of diseases (per 1000)
1. Preparing report data to use in calculation of prevalence rates (for age & race)(used for all calculations by age and race - do not contain % values)
(calculate prevalence rates by using the following formula:
Everybody that has the certain disease in a certain agegroup/Everybody in that same agegroup * 1000)

In available tables:
- choose the table sasuser.autagra
- choose OK
In the available columns:
- highlight agegrp, black, white, coloured, unknown by clicking on them
- take over to selected columns by using Insert

- choose black, white, coloured, unknown,
- choose summary functions, count
to add a total column
- choose build a column
- choose summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, OK
- choose column attributes
- at alias name, type in tot
- at label, type in All races, OK, OK

Choose locals (pull down menu)
- choose where conditions for subset
- from the columns, choose pnumber
- choose other operators, contains
- at the top of all the columns, choose <CONSTANT enter value> and type in 1997. OK, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes

When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.agerace

2. Preparing report data for to use in calculation for prevalence rates (everybody with emphysema by age)
   - use the same method as described above for calculating distribution of emphysema by age,
     but do not include the % columns.
When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under
NB: all this has been done for 1997 data and saved as sasuser.empagera

3. To calculate prevalence rates:
   In available tables:
- choose sasuser.agerace, sasuser.pathaut, sasuser.empagera
- move these to the selected tables window using the 
   In available columns:
- choose agerace.agegrp, empagera.count(black), empagera.count(white),
  empagera.count(coloured), empagera.count(unknown), empagera.count(total)
- to build a column
In this column:
- choose summary functions, sum, empagera.count(black) / sum, agerace.count(black),",
  <CONSTANT enter value>, type in 1000
- choose OK, OK
In column attributes:
  at Alias name, type in bla
  at format, type in best6.1
  at label, type in blaprev
- choose OK, OK

(do this also for the whites, coloureds, and unknowns)
- go to locals (pull down menu)
- choose where conditions for subset
- choose pathaut.pnumber, other operators, contains, <CONSTANT enter value>, type in 1997,
  operators, and, agerace.agegrp, EQ, empagerac.agegrp, OK

To run the query:
- choose actions (pull down menu)
- choose design report, begin with default report, autogroup, yes
When in report window
- choose file (pull down menu), save, report data
- at library, type in sasuser
- at member, type in the filename to save under

(Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported separately to Word Perfect and integrated into a table if desired)

EXPORTING FROM SAS:
Go to file (pull down menu)
choose export
choose at library: sasuser
    member: the file where you saved the data
choose next
choose tab delimited file (*.txt), next
choose browse and choose where and as what you want the file to be saved in Word Perfect
    (Eg. c:sas\sasuser\filename)
choose Finish

IN WORD PERFECT:
Go to File (pull down menu)
choose Open
choose the file you saved the data under in SAS
choose ASCII (DOS) Text

Arrange data in a table and save as a Word Perfect 6 document.

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>BLACK N</th>
<th>BLACK %</th>
<th>WHITE N</th>
<th>WHITE %</th>
<th>COLOURED N</th>
<th>COLOURED %</th>
<th>ALL RACES N</th>
<th>ALL RACES %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>197</td>
<td>76.1</td>
<td>243</td>
<td>76.7</td>
<td>0</td>
<td>0.0</td>
<td>440</td>
<td>73.3</td>
</tr>
<tr>
<td>Coal</td>
<td>13</td>
<td>5.0</td>
<td>14</td>
<td>4.4</td>
<td>0</td>
<td>0.0</td>
<td>27</td>
<td>4.5</td>
</tr>
<tr>
<td>Copper</td>
<td>0</td>
<td>0.0</td>
<td>8</td>
<td>2.5</td>
<td>2</td>
<td>8.3</td>
<td>10</td>
<td>1.7</td>
</tr>
<tr>
<td>Platinum</td>
<td>30</td>
<td>11.6</td>
<td>8</td>
<td>2.5</td>
<td>0</td>
<td>0.0</td>
<td>38</td>
<td>6.3</td>
</tr>
<tr>
<td>Asbestos</td>
<td>3</td>
<td>1.2</td>
<td>3</td>
<td>0.9</td>
<td>22</td>
<td>91.7</td>
<td>28</td>
<td>4.7</td>
</tr>
<tr>
<td>Diamond</td>
<td>1</td>
<td>0.4</td>
<td>4</td>
<td>1.3</td>
<td>0</td>
<td>0.0</td>
<td>5</td>
<td>0.8</td>
</tr>
<tr>
<td>Iscor</td>
<td>1</td>
<td>0.4</td>
<td>16</td>
<td>5.0</td>
<td>0</td>
<td>0.0</td>
<td>17</td>
<td>2.8</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
<td>9</td>
<td>2.8</td>
<td>0</td>
<td>0.0</td>
<td>9</td>
<td>1.5</td>
</tr>
<tr>
<td>Unknown</td>
<td>14</td>
<td>5.4</td>
<td>12</td>
<td>3.8</td>
<td>0</td>
<td>0.0</td>
<td>26</td>
<td>4.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>259</td>
<td></td>
<td>317</td>
<td></td>
<td>24</td>
<td></td>
<td>600</td>
<td>100.0</td>
</tr>
</tbody>
</table>

IN SAS PROGRAM
New variable was created for the severity of emphysema, namely: emphysem from the variable malemsco:
    if malemsco=2 then emphysem='2'; else
    if malemsco=3 then emphysem='3'; else
    if malemsco=4 then emphysem='4';
a format was assigned to this variable:

\[
\text{value empfmt 2='Insignificant'  \\
3='Moderate'  \\
4='Marked';}
\]

format empfmt empfmt.

New variable \textit{minetype} was created from variable \textit{exptype1} to catagorize the types of industries into the following groups:

- if \textit{exptype1}=1 then \textit{minetype}='1'; else
- if \textit{exptype1}=2 then \textit{minetype}='2'; else
- if \textit{exptype1}=3 then \textit{minetype}='3'; else
- if \textit{exptype1}=4 then \textit{minetype}='4'; else
- if \textit{exptype1}=5 then \textit{minetype}='5'; else
- if \textit{exptype1}=6 then \textit{minetype}='6'; else
- if \textit{exptype1}=7 or \textit{exptype1}=10 or \textit{exptype1}=11 or \textit{exptype1}=12 or \textit{exptype1}=13 or \textit{exptype1}=14 or \textit{exptype1}=15 or \textit{exptype1}=16 or \textit{exptype1}=17 or \textit{exptype1}=19 or \textit{exptype1}=20 or \textit{exptype1}=21 or \textit{exptype1}=22 or \textit{exptype1}=23 or \textit{exptype1}=24 or \textit{exptype1}=25 or \textit{exptype1}=26 or \textit{exptype1}=27 or \textit{exptype1}=28 or \textit{exptype1}=29 or \textit{exptype1}=30 then \textit{minetype}='7'; else
- if \textit{exptype1}=8 then \textit{minetype}='8'; else
- if \textit{exptype1}=9 then \textit{minetype}='9';

A format has been assigned to the new variable:

\[
\text{value minfmt 1='Gold'  \\
4='Platinum'  \\
7='Other'  \\
2='Coal'  \\
5='Copper'  \\
8='Iscor'  \\
3='Asbestos'  \\
6='Diamond'  \\
9='Unknown';}
\]

format minfmt minfmt.

\textit{Nr7} (Other) includes:
- Quarry, Silica (Silicon smelters), Manganese, Steel, Tin, Zinc, Minerals, Chrome, Construction, Railways, Industry, Iron (put together as there are too few cases in theses industries)

New variables were created for the races namely: \textbf{black, white, coloured, unknown} from variable \textit{popcode}:

- if \textit{popcode}=1 then \textit{Black}=1; else
- if \textit{popcode}=2 then \textit{White}=1; else
- if \textit{popcode}=3 then \textit{Coloured}=1; else
- if \textit{popcode}=4 then \textit{Unknown}=1;

\textbf{IN SAS:}

Choose the Q icon (To go into the SQL Query Window)
The table source is \textit{sasuser}
In \textbf{Available Tables} choose the table \texttt{sasuser.empinra}
- move this table into the \textbf{selected tables} window by using the \texttt{}}
- choose OK

In the \textbf{available columns} window, choose all the relevant columns (variables) (usually everything up to unknown) (\textit{minetype, black, white, coloured, unknown})
- move these to the selected columns window by using the π
  Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count

To add percentage columns:
- go to build a column
  - choose summary functions, count, variable black
  - choose OK
  - choose column attributes
    - Type in at Alias name: bla
      Format: percent15.1
      Label: black%
  - choose OK and do the same for the white (whi), coloured(col) and unknown(unk) columns

To add row percentages:
- go to build a column
  - choose summary functions, count, variable black, /, operators, (, summary functions, count, black,
    +, count, white, +, count, coloured, +, count, unknown, ), *, <constant enter value>, type in 100
  - choose OK
  - choose column attributes
    - Type in at Alias name: blac
      Format: best4.1
      Label: b%
  - choose OK and do the same for white (whit), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
  - choose , summary functions, count, black, + count, white, + count, coloured + count, unknown
  - choose OK
  - choose column attributes
    - Type in at Alias name: tot
      Format:
      Label: ALL RACES
  - To add a % column for the total column, do the same as for black, white, coloured, unknown,
  but call it Alias name: tota
      Format: percent15.1
      Label: tot%

To set conditions:
- go to Locals (pull down menu)
  - choose where conditions for subset
  - choose variable pnumber, other operators, contains, <CONSTANT enter value>
    - type in 1997 (to work only with 1997 cases)
  - choose operators, and, emphysem, EQ, <lookup distinct values>, -
  - choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes
For titles:
- Go to **globals** (pull down menu)
- choose **options, titles**
- type in title and close

To choose a predefined report definition:
- Go to **file** (pull down menu)
- choose **open, report definition**
- choose in **library** window: **sasuser**
- **catalog** window: **empyse**
- **report** window: **Distribution of emphysema by industry & race**
- choose **OK**

**IN REPORT WINDOW:**
- Go to **file** (pull down menu)
- choose **save, report data**
- save this report in **library**: **sasuser**
  - member: (type in name of file you want to save it under)
- choose **OK**

**TO CHECK**

1. Exposure type codes
   - where: minetype EQ (check for odd codes)

2. Missing data must be filled in as 9 (unknown). If not, will appear as 0 or -
   - where: minetype EQ 0/-

**To calculate prevalence rates of diseases (per 1000)**

1. Preparing report data to use in calculation of prevalence rates (for industry & race) (used for all calculations by industry and race - do not contain % values)
   (calculate prevalence rates by using the following formula:
   Everybody that has the certain disease in a certain industry/Everybody in that same industry * 1000)

**In available tables:**
- choose the table **sasuser.auxextra**
- choose **OK**

**In the available columns:**
- highlight **minetype, black, white, coloured, unknown** by clicking on them
- take over to **selected columns** by using []

- choose **black, white, coloured, unknown**
- choose **summary functions, count**

**to add a total column**
- choose **build a column**
- choose **summary functions, count, black, +, count, white,+,count, coloured,+,count, unknown, OK**
- choose **column attributes**
  - at **alias name**, type in tot
  - at **label**, type in All races, **OK, OK**
Choose **locals** (pull down menu)
- choose **where conditions for subset**
- from the columns, choose **pnumber**
- choose **other operators, contains**
- at the top of all the columns, choose **CONSTANT enter value** and type in 1997. OK, OK

To run the query:
- choose **actions** (pull down menu)
- choose **design report, begin with default report, autogroup, yes**

When in report window
- choose **file** (pull down menu), **save, report data**
- at **library**, type in **sasuser**
- at **member**, type in the filename to save under
**NB:** all this has been done for 1997 data and saved as **sasuser.indurace**

2. Preparing report data for to use in calculation for prevalence rates (everybody with emphysema by industry)
   - use the same method as described above for calculating distribution of emphysema by industry, but do not include the % columns.

When in report window
- choose **file** (pull down menu), **save, report data**
- at **library**, type in **sasuser**
- at **member**, type in the filename to save under
**NB:** all this has been done for 1997 data and saved as **sasuser.empindra**

3. To calculate prevalence rates:
   In available tables:
   - choose **sasuser.indurace, sasuser.pathaut, sasuser.empindra**
   - move these to the selected tables window using the ➔
   In available columns:
   - choose **indurace.agegrp, empindra.count(black), empindra.count(white), empindra.count(coloured), empindra.count(unknown), empindra.count(tot)**
   - to build a column
   In this column:
   - choose **summary functions, sum, empindra.count(black) / sum, indurace.count(black),**, **CONSTANT enter value**, type in 1000
   - choose **OK, OK**
   In column attributes:
   - at **Alias name**, type in **bla**
   - at **format**, type in **best6.1**
   - at **label**, type in **biaprev**
   - choose **OK,OK**

   (do this also for the whites, coloureds, and unknowns)
   - go to **locals** (pull down menu)
   - choose **where conditions for subset**
   - choose **pathaut.pnumber, other operators, contains, CONSTANT enter value**, type in 1997, operators, and, **indurace.agegrp, EQ, empindra.agegrp, OK**
To run the query:
- choose **actions** (pull down menu)
- choose **design report, begin with default report, autogroup, yes**

When in report window
- choose **file** (pull down menu), **save, report data**
- at **library**, type in **sasuser**
- at **member**, type in the filename to save under

(Unfortunately the prevalence rates and frequencies/% cannot be calculated as one table in SAS, and therefore these data must be exported separately to Word Perfect and integrated into a table if desired)

**EXPORTING FROM SAS:**
Go to **file** (pull down menu)
choose **export**
choose at **library**: **sasuser**
    **member**: the file where you saved the data
choose **next**
choose **tab delimited file (*.txt), next**
choose **browse** and choose where and as what you want the file to be saved in Word Perfect
    (Eg. c:\sas\sasuser\filename)
choose **Finish**

**IN WORD PERFECT:**
Go to **File** (pull down menu)
choose **Open**
choose the file you saved the data under in SAS
choose **ASCII (DOS) Text**

Arrange data in a table and **save** as a Word Perfect 6 document.

<table>
<thead>
<tr>
<th>TABLE 44: DISTRIBUTION OF EMPHYSEMA BY EXPOSURE TIME &amp; ETHNIC GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SERVICE (YEARS)</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
</tr>
<tr>
<td>1-5</td>
</tr>
<tr>
<td>6-10</td>
</tr>
<tr>
<td>11-15</td>
</tr>
<tr>
<td>16-20</td>
</tr>
<tr>
<td>21-25</td>
</tr>
<tr>
<td>26-30</td>
</tr>
<tr>
<td>31+</td>
</tr>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

**IN SAS PROGRAM**
New variable was created for the severity of emphysema, namely: **emphysem** from the variable **malemso**:
if malemsco=2 then emphysem='2'; else
if malemsco=3 then emphysem='3'; else
if malemsco=4 then emphysem='4';

a format was assigned to this variable:

    value emphfmt 2='Insignificant'
            3='Moderate'
            4='Marked';

    format emphysem emphfmt.

New variable expyear was created from variable expyear1 to categorize the types years of service into the following groups:
if expyear1>0 and expyear1 < 1 then expyear='1'; else
if expyear1 GE 1 and LE 5.9 then expyear='2'; else
if expyear1 GE 6 and LE 10.9 then expyear='3'; else
if expyear1 GE 11 and LE than 15.9 then expyear='4'; else
if expyear1 GE 16 and LE 20.9 then expyear='5'; else
if expyear1 GE 21 and LE 25.9 then expyear='6'; else
if expyear1 GE 26 and LE 30.9 then expyear='7'; else
if expyear1 >30.9 then expyear='8'; else
if expyear1=0 then expyear='9';

A format has been assigned to the new variable:

    value exyfmt 1='<1'
            2='1-5'
            3='6-10'
            4='11-15'
            5='16-20'
            6='21-25'
            7='26-30'
            8='31+'
            9='Missing';

    format expyear exyfmt.;

New variables were created for the races namely: black, white, coloured, unknown from variable popcode:
if popcode=1 then Black=1; else
if popcode=2 then White=1; else
if popcode=3 then Coloured=1; else
if popcode=4 then Unknown=1;

IN SAS:
Choose the Q icon (To go into the SQL Query Window)
The table source is sasuser
In Available Tables choose the table sasuser.empexra
- move this table into the selected tables window by using the 
- choose OK

In the available columns window, choose all the relevant columns (variables) (usually everything up to unknown) (expyear, black, white, coloured, unknown)
- move these to the selected columns window by using the 
Highlight black, white, coloured, unknown by clicking on all of them
- go to summary functions and choose count
To add percentage columns:
- go to build a column
- choose summary functions, count, variable black
- choose OK
- choose column attributes
  - Type in at Alias name: bia
    Format: percent15.1
    Label: black%
- choose OK and do the same for the white (whi), coloured (col) and unknown (unk) columns

To add row percentages:
- go to build a column
- choose summary functions, count, variable black, /, operators, (, summary functions, count, black, +, count, white, +, count, coloured, +, count, unknown, ), =, <constant enter value>, type in 100
- choose OK
- choose column attributes
  - Type in at Alias name: blac
    Format: best4.1
    Label: b%
- choose OK and do the same for white (whi), coloured (colour) and unknown (unknown)

To add the total column:
- go to build a column
- choose , summary functions, count, black, + count, white, + count, coloured+ count, unknown
- choose OK
- choose column attributes
  - Type in at Alias name: tot
    Format:
    Label: ALL RACES
- To add a % column for the total column, do the same as for black, white, coloured, unknown, but call it Alias name: tota
  Format: percent15.1
  Label: tot%

To set conditions:
- go to Locals (pull down menu)
- choose where conditions for subset
- choose variable pnumber, other operators, contains, <CONSTANT enter value>
  - type in 1997 (to work only with 1997 cases)
- choose operators, and, emphysem, NE, <lookup distinct values>,
- choose OK, OK

To run report
- Choose Actions (pull down menu)
- Choose Run query, design report, begin with default report, autogroup, yes

For titles:
- Go to globals (pull down menu)
- choose options, titles
- type in title and close