

# Indexing.R

015004

Tue Jan 22 10:51:51 2019

```
#####  
# Load packages #  
#####
```

```
library(JM)
```

```
## Loading required package: MASS  
## Loading required package: nlme  
## Loading required package: splines  
## Loading required package: survival
```

```
#####  
# Indexing #  
#####
```

```
## Select the 3rd element for vector age.  
pbc2.id$age[3]
```

```
## [1] 70.07447
```

```
pbc2$age[3]
```

```
## [1] 56.44782
```

```
## Select the 3rd column.  
pbc2.id[, 3]
```

```
## [1] dead      alive      dead      dead      transplanted  
## [6] dead      alive      dead      dead      dead  
## [11] dead      dead      alive     dead      dead  
## [16] alive     dead      dead      alive     dead  
## [21] dead      dead      dead      dead      alive  
## [26] dead      dead      dead      dead      dead  
## [31] dead      alive     dead      alive     dead  
## [36] alive     dead      dead      dead      alive  
## [41] dead      alive     alive     dead      alive  
## [46] dead      alive     alive     dead      dead  
## [51] dead      dead      dead      dead      dead  
## [56] dead      dead      alive     dead      alive  
## [61] alive     dead      dead      dead      alive  
## [66] dead      dead      alive     dead      dead  
## [71] alive     alive     alive     dead      dead  
## [76] dead      dead      dead      alive     dead  
## [81] dead      dead      alive     alive     dead  
## [86] dead      dead      dead      dead      dead  
## [91] dead      dead      alive     dead      dead  
## [96] alive     dead      alive     alive     dead  
## [101] alive    alive     dead      dead      transplanted
```

```

## [106] dead      alive      dead      alive      dead
## [111] transplanted dead      dead      dead      alive
## [116] alive      dead      dead      dead      transplanted
## [121] dead      alive      dead      dead      transplanted
## [126] dead      alive      dead      alive      dead
## [131] dead      alive      dead      alive      alive
## [136] alive      alive      dead      transplanted alive
## [141] alive      dead      dead      dead      alive
## [146] dead      dead      dead      dead      alive
## [151] alive      dead      alive      dead      alive
## [156] dead      alive      transplanted dead      alive
## [161] alive      dead      dead      dead      dead
## [166] alive      dead      alive      dead      alive
## [171] alive      alive      alive      alive      alive
## [176] dead      alive      alive      alive      alive
## [181] alive      alive      transplanted dead      dead
## [186] dead      dead      alive      alive      alive
## [191] dead      alive      dead      alive      alive
## [196] dead      alive      alive      alive      transplanted
## [201] alive      alive      alive      dead      dead
## [206] alive      alive      dead      alive      alive
## [211] alive      alive      alive      dead      dead
## [216] alive      dead      alive      alive      dead
## [221] alive      dead      dead      alive      alive
## [226] alive      dead      alive      dead      alive
## [231] dead      alive      alive      alive      transplanted
## [236] alive      transplanted dead      dead      alive
## [241] transplanted dead      dead      dead      alive
## [246] transplanted transplanted alive      alive      transplanted
## [251] alive      alive      alive      transplanted alive
## [256] alive      alive      alive      alive      dead
## [261] alive      transplanted transplanted transplanted transplanted
## [266] alive      dead      dead      dead      transplanted
## [271] alive      alive      transplanted transplanted alive
## [276] alive      alive      transplanted alive      alive
## [281] dead      transplanted alive      alive      alive
## [286] alive      alive      transplanted dead      alive
## [291] transplanted dead      alive      alive      transplanted
## [296] alive      transplanted alive      alive      dead
## [301] alive      alive      dead      alive      alive
## [306] alive      alive      alive      alive      alive
## [311] alive      alive
## Levels: alive transplanted dead

```

```

pbc2[, 3]

```

```

##      [1] dead      dead      alive      alive      alive
##      [6] alive      alive      alive      alive      alive
##     [11] alive      dead      dead      dead      dead
##     [16] dead      dead      dead      dead      dead
##     [21] dead      dead      transplanted transplanted transplanted
##     [26] transplanted transplanted transplanted dead      dead
##     [31] dead      dead      dead      dead      alive
##     [36] alive      alive      alive      alive      alive
##     [41] alive      dead      dead      dead      dead

```

##	[46]	dead	dead	dead	dead	dead
##	[51]	dead	dead	dead	dead	dead
##	[56]	dead	dead	dead	dead	dead
##	[61]	dead	dead	dead	dead	dead
##	[66]	dead	dead	dead	dead	dead
##	[71]	dead	alive	alive	alive	alive
##	[76]	alive	alive	alive	alive	alive
##	[81]	alive	alive	alive	dead	dead
##	[86]	dead	dead	dead	dead	dead
##	[91]	dead	dead	dead	dead	dead
##	[96]	dead	dead	dead	dead	dead
##	[101]	dead	alive	alive	alive	alive
##	[106]	alive	alive	alive	alive	alive
##	[111]	alive	alive	alive	alive	dead
##	[116]	dead	dead	dead	alive	alive
##	[121]	alive	alive	alive	alive	alive
##	[126]	alive	alive	alive	alive	alive
##	[131]	alive	alive	alive	dead	dead
##	[136]	dead	dead	dead	dead	dead
##	[141]	dead	dead	dead	dead	dead
##	[146]	dead	dead	dead	dead	dead
##	[151]	dead	dead	dead	dead	dead
##	[156]	dead	dead	dead	dead	dead
##	[161]	dead	dead	dead	dead	dead
##	[166]	dead	dead	alive	alive	alive
##	[171]	alive	alive	alive	alive	alive
##	[176]	alive	alive	alive	alive	dead
##	[181]	dead	dead	dead	dead	dead
##	[186]	dead	dead	dead	dead	dead
##	[191]	dead	dead	dead	dead	dead
##	[196]	dead	dead	dead	dead	dead
##	[201]	dead	dead	dead	dead	dead
##	[206]	dead	dead	dead	dead	dead
##	[211]	dead	dead	dead	dead	alive
##	[216]	alive	alive	alive	alive	alive
##	[221]	alive	alive	alive	alive	alive
##	[226]	alive	alive	alive	alive	alive
##	[231]	dead	dead	dead	dead	dead
##	[236]	dead	dead	dead	dead	dead
##	[241]	alive	alive	alive	alive	alive
##	[246]	alive	alive	alive	alive	alive
##	[251]	alive	alive	alive	alive	dead
##	[256]	dead	dead	dead	alive	alive
##	[261]	alive	alive	alive	alive	alive
##	[266]	alive	alive	alive	alive	dead
##	[271]	dead	dead	dead	dead	dead
##	[276]	dead	dead	dead	dead	dead
##	[281]	dead	dead	dead	dead	dead
##	[286]	dead	dead	dead	dead	alive
##	[291]	alive	alive	alive	alive	alive
##	[296]	alive	alive	alive	alive	alive
##	[301]	alive	alive	alive	alive	dead
##	[306]	dead	dead	dead	alive	alive
##	[311]	alive	alive	alive	alive	alive

##	[316]	alive	alive	alive	alive	alive
##	[321]	alive	alive	alive	alive	alive
##	[326]	alive	alive	alive	alive	alive
##	[331]	alive	alive	alive	alive	alive
##	[336]	alive	alive	alive	alive	dead
##	[341]	dead	dead	dead	dead	dead
##	[346]	dead	dead	dead	dead	dead
##	[351]	alive	alive	alive	alive	alive
##	[356]	alive	alive	alive	alive	dead
##	[361]	dead	dead	dead	dead	dead
##	[366]	dead	dead	alive	alive	alive
##	[371]	alive	alive	alive	alive	alive
##	[376]	alive	alive	alive	alive	alive
##	[381]	alive	alive	alive	dead	dead
##	[386]	dead	dead	dead	dead	dead
##	[391]	dead	dead	dead	dead	dead
##	[396]	dead	dead	dead	dead	dead
##	[401]	dead	dead	dead	dead	dead
##	[406]	dead	dead	dead	dead	dead
##	[411]	dead	dead	dead	dead	dead
##	[416]	dead	dead	dead	dead	dead
##	[421]	dead	dead	dead	dead	dead
##	[426]	dead	dead	dead	dead	dead
##	[431]	dead	dead	dead	dead	dead
##	[436]	dead	dead	dead	dead	dead
##	[441]	dead	dead	dead	dead	dead
##	[446]	dead	alive	alive	alive	alive
##	[451]	alive	alive	alive	alive	alive
##	[456]	alive	alive	alive	alive	alive
##	[461]	alive	alive	dead	dead	dead
##	[466]	dead	dead	dead	dead	alive
##	[471]	alive	alive	alive	alive	alive
##	[476]	alive	alive	alive	alive	alive
##	[481]	alive	alive	alive	alive	alive
##	[486]	alive	alive	alive	alive	alive
##	[491]	alive	alive	alive	alive	alive
##	[496]	alive	dead	dead	dead	dead
##	[501]	dead	dead	dead	dead	dead
##	[506]	dead	dead	dead	dead	dead
##	[511]	dead	dead	dead	dead	dead
##	[516]	alive	alive	alive	alive	alive
##	[521]	alive	dead	dead	dead	dead
##	[526]	dead	dead	dead	dead	dead
##	[531]	dead	dead	dead	dead	dead
##	[536]	dead	dead	dead	dead	dead
##	[541]	dead	dead	dead	dead	alive
##	[546]	alive	alive	alive	alive	alive
##	[551]	alive	alive	alive	alive	alive
##	[556]	alive	alive	alive	dead	dead
##	[561]	dead	dead	dead	dead	dead
##	[566]	dead	dead	dead	dead	dead
##	[571]	dead	dead	dead	dead	dead
##	[576]	alive	alive	alive	alive	alive
##	[581]	alive	alive	alive	alive	alive

##	[586]	alive	alive	alive	alive	alive
##	[591]	alive	alive	alive	alive	alive
##	[596]	alive	alive	alive	alive	alive
##	[601]	alive	alive	alive	alive	alive
##	[606]	alive	alive	dead	dead	dead
##	[611]	dead	dead	dead	dead	dead
##	[616]	dead	dead	dead	dead	dead
##	[621]	dead	dead	dead	alive	alive
##	[626]	alive	alive	alive	alive	alive
##	[631]	alive	alive	alive	alive	dead
##	[636]	dead	dead	dead	dead	dead
##	[641]	dead	dead	dead	dead	dead
##	[646]	dead	dead	dead	dead	dead
##	[651]	dead	dead	dead	dead	dead
##	[656]	dead	dead	dead	alive	alive
##	[661]	alive	alive	alive	alive	alive
##	[666]	alive	alive	alive	alive	alive
##	[671]	alive	alive	alive	alive	alive
##	[676]	alive	dead	dead	dead	dead
##	[681]	dead	dead	dead	dead	dead
##	[686]	dead	dead	dead	dead	dead
##	[691]	dead	dead	dead	dead	dead
##	[696]	dead	dead	dead	dead	dead
##	[701]	dead	dead	dead	dead	dead
##	[706]	dead	dead	dead	dead	dead
##	[711]	dead	alive	alive	alive	alive
##	[716]	alive	alive	alive	alive	alive
##	[721]	alive	alive	alive	alive	alive
##	[726]	alive	dead	dead	dead	dead
##	[731]	alive	alive	alive	alive	alive
##	[736]	alive	alive	alive	alive	alive
##	[741]	alive	alive	alive	alive	dead
##	[746]	dead	dead	dead	alive	alive
##	[751]	alive	alive	alive	alive	alive
##	[756]	alive	alive	alive	alive	alive
##	[761]	alive	alive	alive	alive	alive
##	[766]	alive	alive	alive	alive	alive
##	[771]	alive	alive	alive	alive	alive
##	[776]	dead	dead	dead	dead	alive
##	[781]	alive	alive	alive	alive	alive
##	[786]	alive	alive	alive	alive	alive
##	[791]	alive	alive	alive	alive	alive
##	[796]	alive	alive	alive	alive	alive
##	[801]	alive	alive	alive	dead	dead
##	[806]	dead	dead	dead	dead	dead
##	[811]	dead	dead	dead	dead	transplanted
##	[816]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[821]	transplanted	transplanted	transplanted	transplanted	dead
##	[826]	dead	dead	dead	dead	alive
##	[831]	alive	alive	alive	alive	alive
##	[836]	alive	alive	alive	alive	alive
##	[841]	dead	dead	dead	dead	dead
##	[846]	dead	dead	dead	alive	alive
##	[851]	alive	alive	alive	alive	alive

##	[856]	alive	alive	alive	dead	dead
##	[861]	dead	dead	dead	dead	dead
##	[866]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[871]	transplanted	transplanted	transplanted	dead	dead
##	[876]	dead	dead	dead	dead	dead
##	[881]	dead	dead	dead	dead	dead
##	[886]	dead	dead	dead	dead	dead
##	[891]	dead	dead	dead	dead	dead
##	[896]	dead	dead	dead	dead	dead
##	[901]	alive	alive	alive	alive	alive
##	[906]	alive	alive	alive	alive	alive
##	[911]	alive	alive	alive	alive	alive
##	[916]	alive	alive	alive	alive	alive
##	[921]	alive	alive	alive	dead	dead
##	[926]	dead	dead	dead	dead	dead
##	[931]	dead	dead	dead	dead	dead
##	[936]	dead	dead	transplanted	transplanted	transplanted
##	[941]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[946]	dead	alive	alive	alive	alive
##	[951]	alive	alive	alive	alive	alive
##	[956]	alive	dead	dead	dead	transplanted
##	[961]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[966]	transplanted	transplanted	transplanted	dead	dead
##	[971]	dead	dead	dead	alive	alive
##	[976]	alive	alive	alive	alive	alive
##	[981]	alive	alive	alive	alive	dead
##	[986]	dead	dead	dead	dead	alive
##	[991]	alive	alive	alive	alive	alive
##	[996]	alive	alive	alive	alive	alive
##	[1001]	alive	dead	dead	dead	dead
##	[1006]	dead	dead	dead	dead	dead
##	[1011]	dead	alive	alive	alive	alive
##	[1016]	alive	alive	dead	dead	dead
##	[1021]	dead	dead	dead	dead	dead
##	[1026]	dead	alive	alive	alive	alive
##	[1031]	alive	alive	alive	alive	alive
##	[1036]	alive	alive	alive	alive	alive
##	[1041]	alive	alive	alive	alive	alive
##	[1046]	alive	alive	alive	alive	alive
##	[1051]	alive	alive	alive	alive	alive
##	[1056]	alive	alive	alive	alive	alive
##	[1061]	alive	alive	alive	alive	alive
##	[1066]	alive	alive	alive	alive	dead
##	[1071]	dead	dead	dead	dead	dead
##	[1076]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1081]	transplanted	alive	alive	alive	alive
##	[1086]	alive	alive	alive	alive	alive
##	[1091]	alive	alive	alive	alive	alive
##	[1096]	alive	dead	dead	dead	dead
##	[1101]	dead	dead	dead	dead	dead
##	[1106]	dead	dead	dead	dead	dead
##	[1111]	dead	dead	alive	alive	alive
##	[1116]	alive	dead	dead	dead	dead
##	[1121]	dead	dead	dead	dead	dead

##	[1126]	dead	dead	dead	dead	dead
##	[1131]	dead	dead	dead	dead	dead
##	[1136]	dead	dead	alive	alive	alive
##	[1141]	alive	alive	alive	alive	alive
##	[1146]	alive	alive	alive	alive	alive
##	[1151]	alive	alive	alive	alive	alive
##	[1156]	alive	alive	dead	dead	dead
##	[1161]	alive	alive	alive	alive	alive
##	[1166]	alive	alive	alive	alive	alive
##	[1171]	dead	alive	alive	alive	dead
##	[1176]	dead	dead	dead	alive	alive
##	[1181]	alive	alive	alive	alive	alive
##	[1186]	alive	alive	alive	alive	transplanted
##	[1191]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1196]	transplanted	transplanted	transplanted	dead	dead
##	[1201]	dead	dead	alive	alive	alive
##	[1206]	alive	alive	alive	alive	alive
##	[1211]	alive	alive	alive	alive	alive
##	[1216]	alive	alive	alive	alive	alive
##	[1221]	alive	dead	dead	dead	dead
##	[1226]	dead	dead	dead	dead	dead
##	[1231]	dead	alive	alive	alive	alive
##	[1236]	alive	alive	alive	alive	dead
##	[1241]	dead	dead	dead	dead	dead
##	[1246]	alive	alive	alive	alive	alive
##	[1251]	alive	alive	alive	alive	alive
##	[1256]	dead	dead	dead	dead	dead
##	[1261]	alive	alive	alive	alive	alive
##	[1266]	alive	alive	alive	alive	alive
##	[1271]	alive	alive	alive	alive	alive
##	[1276]	alive	alive	alive	alive	alive
##	[1281]	alive	alive	alive	alive	alive
##	[1286]	alive	alive	alive	alive	alive
##	[1291]	alive	alive	alive	alive	alive
##	[1296]	alive	alive	alive	alive	alive
##	[1301]	alive	alive	alive	alive	alive
##	[1306]	alive	alive	dead	dead	dead
##	[1311]	dead	dead	dead	alive	alive
##	[1316]	alive	alive	alive	alive	alive
##	[1321]	alive	alive	alive	alive	alive
##	[1326]	alive	alive	alive	alive	alive
##	[1331]	alive	alive	alive	alive	alive
##	[1336]	alive	alive	alive	alive	transplanted
##	[1341]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1346]	transplanted	transplanted	dead	dead	dead
##	[1351]	dead	dead	dead	dead	dead
##	[1356]	dead	dead	dead	dead	dead
##	[1361]	dead	dead	dead	dead	dead
##	[1366]	alive	alive	alive	alive	alive
##	[1371]	alive	alive	alive	alive	alive
##	[1376]	alive	alive	alive	alive	alive
##	[1381]	alive	alive	dead	alive	alive
##	[1386]	alive	alive	alive	alive	alive
##	[1391]	alive	alive	alive	dead	dead

##	[1396]	dead	dead	alive	alive	alive
##	[1401]	alive	alive	alive	dead	dead
##	[1406]	dead	dead	dead	dead	dead
##	[1411]	dead	alive	alive	alive	alive
##	[1416]	alive	alive	alive	alive	alive
##	[1421]	alive	alive	alive	alive	alive
##	[1426]	alive	alive	alive	alive	alive
##	[1431]	alive	transplanted	transplanted	transplanted	transplanted
##	[1436]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1441]	transplanted	transplanted	alive	alive	alive
##	[1446]	alive	alive	alive	alive	alive
##	[1451]	alive	alive	alive	alive	alive
##	[1456]	alive	alive	alive	alive	alive
##	[1461]	alive	alive	alive	dead	dead
##	[1466]	dead	dead	dead	dead	dead
##	[1471]	dead	dead	dead	dead	dead
##	[1476]	dead	alive	alive	alive	alive
##	[1481]	alive	alive	alive	alive	alive
##	[1486]	alive	alive	alive	alive	alive
##	[1491]	alive	dead	dead	dead	alive
##	[1496]	alive	alive	alive	alive	alive
##	[1501]	alive	alive	alive	alive	alive
##	[1506]	alive	alive	alive	alive	alive
##	[1511]	alive	alive	alive	alive	alive
##	[1516]	alive	alive	alive	alive	alive
##	[1521]	alive	alive	dead	dead	dead
##	[1526]	dead	dead	dead	dead	dead
##	[1531]	alive	alive	alive	alive	alive
##	[1536]	alive	alive	dead	dead	dead
##	[1541]	dead	alive	alive	alive	alive
##	[1546]	alive	alive	alive	alive	alive
##	[1551]	alive	alive	alive	alive	alive
##	[1556]	alive	alive	dead	dead	dead
##	[1561]	dead	dead	alive	alive	alive
##	[1566]	alive	alive	alive	alive	alive
##	[1571]	dead	dead	dead	dead	dead
##	[1576]	alive	alive	alive	alive	alive
##	[1581]	alive	alive	alive	alive	alive
##	[1586]	alive	alive	alive	alive	alive
##	[1591]	alive	alive	alive	alive	alive
##	[1596]	alive	alive	alive	alive	alive
##	[1601]	alive	dead	dead	dead	dead
##	[1606]	alive	alive	alive	alive	dead
##	[1611]	dead	dead	alive	alive	alive
##	[1616]	alive	dead	dead	dead	dead
##	[1621]	alive	alive	alive	alive	alive
##	[1626]	alive	alive	transplanted	transplanted	alive
##	[1631]	alive	transplanted	transplanted	dead	dead
##	[1636]	dead	dead	dead	dead	alive
##	[1641]	alive	alive	alive	alive	alive
##	[1646]	alive	alive	transplanted	transplanted	transplanted
##	[1651]	transplanted	dead	dead	dead	dead
##	[1656]	dead	dead	dead	dead	dead
##	[1661]	dead	dead	dead	dead	dead



##	[1666]	alive	alive	transplanted	transplanted	transplanted
##	[1671]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1676]	transplanted	transplanted	alive	alive	alive
##	[1681]	alive	alive	alive	alive	alive
##	[1686]	alive	alive	alive	transplanted	transplanted
##	[1691]	alive	alive	alive	alive	alive
##	[1696]	alive	alive	alive	alive	alive
##	[1701]	alive	alive	transplanted	transplanted	transplanted
##	[1706]	transplanted	alive	alive	alive	alive
##	[1711]	alive	alive	alive	alive	alive
##	[1716]	alive	alive	alive	alive	alive
##	[1721]	alive	alive	alive	alive	alive
##	[1726]	alive	alive	alive	alive	alive
##	[1731]	alive	alive	alive	alive	dead
##	[1736]	alive	alive	alive	alive	alive
##	[1741]	alive	transplanted	transplanted	transplanted	transplanted
##	[1746]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1751]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1756]	transplanted	transplanted	alive	alive	alive
##	[1761]	alive	alive	alive	alive	dead
##	[1766]	dead	dead	dead	dead	dead
##	[1771]	dead	dead	dead	dead	transplanted
##	[1776]	transplanted	transplanted	alive	alive	alive
##	[1781]	alive	alive	alive	alive	alive
##	[1786]	alive	alive	alive	alive	alive
##	[1791]	alive	transplanted	transplanted	transplanted	transplanted
##	[1796]	transplanted	transplanted	transplanted	transplanted	alive
##	[1801]	alive	alive	alive	alive	alive
##	[1806]	alive	alive	alive	alive	alive
##	[1811]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1816]	alive	alive	alive	alive	alive
##	[1821]	alive	alive	alive	alive	alive
##	[1826]	alive	alive	alive	alive	dead
##	[1831]	transplanted	transplanted	transplanted	transplanted	alive
##	[1836]	alive	alive	alive	alive	alive
##	[1841]	alive	alive	alive	alive	alive
##	[1846]	alive	alive	alive	alive	alive
##	[1851]	alive	alive	transplanted	transplanted	dead
##	[1856]	dead	dead	dead	alive	alive
##	[1861]	alive	alive	alive	alive	alive
##	[1866]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1871]	dead	dead	dead	alive	alive
##	[1876]	alive	alive	alive	alive	alive
##	[1881]	alive	alive	transplanted	transplanted	alive
##	[1886]	alive	alive	transplanted	transplanted	transplanted
##	[1891]	alive	alive	alive	alive	dead
##	[1896]	dead	alive	alive	alive	alive
##	[1901]	alive	alive	alive	alive	dead
##	[1906]	dead	dead	dead	alive	alive
##	[1911]	alive	alive	alive	alive	alive
##	[1916]	alive	alive	alive	alive	alive
##	[1921]	alive	alive	alive	alive	alive
##	[1926]	alive	alive	alive	alive	alive
##	[1931]	alive	alive	alive	alive	alive

```
## [1936] alive      alive      alive      alive      alive
## [1941] alive      alive      alive      alive      alive
## Levels: alive transplanted dead
```

```
pb2c.id[[3]]
```

```
## [1] dead      alive      dead      dead      transplanted
## [6] dead      alive      dead      dead      dead
## [11] dead      dead      alive      dead      dead
## [16] alive      dead      dead      alive      dead
## [21] dead      dead      dead      dead      alive
## [26] dead      dead      dead      dead      dead
## [31] dead      alive      dead      alive      dead
## [36] alive      dead      dead      dead      alive
## [41] dead      alive      alive      dead      alive
## [46] dead      alive      alive      dead      dead
## [51] dead      dead      dead      dead      dead
## [56] dead      dead      alive      dead      alive
## [61] alive      dead      dead      dead      alive
## [66] dead      dead      alive      dead      dead
## [71] alive      alive      alive      dead      dead
## [76] dead      dead      dead      alive      dead
## [81] dead      dead      alive      alive      dead
## [86] dead      dead      dead      dead      dead
## [91] dead      dead      alive      dead      dead
## [96] alive      dead      alive      alive      dead
## [101] alive      alive      dead      dead      transplanted
## [106] dead      alive      dead      alive      dead
## [111] transplanted dead      dead      dead      alive
## [116] alive      dead      dead      dead      transplanted
## [121] dead      alive      dead      dead      transplanted
## [126] dead      alive      dead      alive      dead
## [131] dead      alive      dead      alive      alive
## [136] alive      alive      dead      transplanted alive
## [141] alive      dead      dead      dead      alive
## [146] dead      dead      dead      dead      alive
## [151] alive      dead      alive      dead      alive
## [156] dead      alive      transplanted dead      alive
## [161] alive      dead      dead      dead      dead
## [166] alive      dead      alive      dead      alive
## [171] alive      alive      alive      alive      alive
## [176] dead      alive      alive      alive      alive
## [181] alive      alive      transplanted dead      dead
## [186] dead      dead      alive      alive      alive
## [191] dead      alive      dead      alive      alive
## [196] dead      alive      alive      alive      transplanted
## [201] alive      alive      alive      dead      dead
## [206] alive      alive      dead      alive      alive
## [211] alive      alive      alive      dead      dead
## [216] alive      dead      alive      alive      dead
## [221] alive      dead      dead      alive      alive
## [226] alive      dead      alive      dead      alive
## [231] dead      alive      alive      alive      transplanted
## [236] alive      transplanted dead      dead      alive
## [241] transplanted dead      dead      dead      alive
```

```

## [246] transplanted transplanted alive      alive      transplanted
## [251] alive          alive      alive      transplanted alive
## [256] alive          alive      alive      alive      dead
## [261] alive          transplanted transplanted transplanted transplanted
## [266] alive          dead        dead        dead        transplanted
## [271] alive          alive      transplanted transplanted alive
## [276] alive          alive      transplanted alive      alive
## [281] dead          transplanted alive      alive      alive
## [286] alive          alive      transplanted dead      alive
## [291] transplanted dead        alive      alive      transplanted
## [296] alive          transplanted alive      alive      dead
## [301] alive          alive      dead        alive      alive
## [306] alive          alive      alive      alive      alive
## [311] alive          alive
## Levels: alive transplanted dead

```

```
pbc2[[3]]
```

```

##      [1] dead      dead      alive      alive      alive
##      [6] alive      alive      alive      alive      alive
##     [11] alive      dead      dead      dead      dead
##     [16] dead      dead      dead      dead      dead
##     [21] dead      dead      transplanted transplanted transplanted
##     [26] transplanted transplanted transplanted dead      dead
##     [31] dead      dead      dead      dead      alive
##     [36] alive      alive      alive      alive      alive
##     [41] alive      dead      dead      dead      dead
##     [46] dead      dead      dead      dead      dead
##     [51] dead      dead      dead      dead      dead
##     [56] dead      dead      dead      dead      dead
##     [61] dead      dead      dead      dead      dead
##     [66] dead      dead      dead      dead      dead
##     [71] dead      alive      alive      alive      alive
##     [76] alive      alive      alive      alive      alive
##     [81] alive      alive      alive      dead      dead
##     [86] dead      dead      dead      dead      dead
##     [91] dead      dead      dead      dead      dead
##     [96] dead      dead      dead      dead      dead
##    [101] dead      alive      alive      alive      alive
##    [106] alive      alive      alive      alive      alive
##    [111] alive      alive      alive      alive      dead
##    [116] dead      dead      dead      alive      alive
##    [121] alive      alive      alive      alive      alive
##    [126] alive      alive      alive      alive      alive
##    [131] alive      alive      alive      dead      dead
##    [136] dead      dead      dead      dead      dead
##    [141] dead      dead      dead      dead      dead
##    [146] dead      dead      dead      dead      dead
##    [151] dead      dead      dead      dead      dead
##    [156] dead      dead      dead      dead      dead
##    [161] dead      dead      dead      dead      dead
##    [166] dead      dead      alive      alive      alive
##    [171] alive      alive      alive      alive      alive
##    [176] alive      alive      alive      alive      dead
##    [181] dead      dead      dead      dead      dead

```

##	[186]	dead	dead	dead	dead	dead
##	[191]	dead	dead	dead	dead	dead
##	[196]	dead	dead	dead	dead	dead
##	[201]	dead	dead	dead	dead	dead
##	[206]	dead	dead	dead	dead	dead
##	[211]	dead	dead	dead	dead	alive
##	[216]	alive	alive	alive	alive	alive
##	[221]	alive	alive	alive	alive	alive
##	[226]	alive	alive	alive	alive	alive
##	[231]	dead	dead	dead	dead	dead
##	[236]	dead	dead	dead	dead	dead
##	[241]	alive	alive	alive	alive	alive
##	[246]	alive	alive	alive	alive	alive
##	[251]	alive	alive	alive	alive	dead
##	[256]	dead	dead	dead	alive	alive
##	[261]	alive	alive	alive	alive	alive
##	[266]	alive	alive	alive	alive	dead
##	[271]	dead	dead	dead	dead	dead
##	[276]	dead	dead	dead	dead	dead
##	[281]	dead	dead	dead	dead	dead
##	[286]	dead	dead	dead	dead	alive
##	[291]	alive	alive	alive	alive	alive
##	[296]	alive	alive	alive	alive	alive
##	[301]	alive	alive	alive	alive	dead
##	[306]	dead	dead	dead	alive	alive
##	[311]	alive	alive	alive	alive	alive
##	[316]	alive	alive	alive	alive	alive
##	[321]	alive	alive	alive	alive	alive
##	[326]	alive	alive	alive	alive	alive
##	[331]	alive	alive	alive	alive	alive
##	[336]	alive	alive	alive	alive	dead
##	[341]	dead	dead	dead	dead	dead
##	[346]	dead	dead	dead	dead	dead
##	[351]	alive	alive	alive	alive	alive
##	[356]	alive	alive	alive	alive	dead
##	[361]	dead	dead	dead	dead	dead
##	[366]	dead	dead	alive	alive	alive
##	[371]	alive	alive	alive	alive	alive
##	[376]	alive	alive	alive	alive	alive
##	[381]	alive	alive	alive	dead	dead
##	[386]	dead	dead	dead	dead	dead
##	[391]	dead	dead	dead	dead	dead
##	[396]	dead	dead	dead	dead	dead
##	[401]	dead	dead	dead	dead	dead
##	[406]	dead	dead	dead	dead	dead
##	[411]	dead	dead	dead	dead	dead
##	[416]	dead	dead	dead	dead	dead
##	[421]	dead	dead	dead	dead	dead
##	[426]	dead	dead	dead	dead	dead
##	[431]	dead	dead	dead	dead	dead
##	[436]	dead	dead	dead	dead	dead
##	[441]	dead	dead	dead	dead	dead
##	[446]	dead	alive	alive	alive	alive
##	[451]	alive	alive	alive	alive	alive

##	[456]	alive	alive	alive	alive	alive
##	[461]	alive	alive	dead	dead	dead
##	[466]	dead	dead	dead	dead	alive
##	[471]	alive	alive	alive	alive	alive
##	[476]	alive	alive	alive	alive	alive
##	[481]	alive	alive	alive	alive	alive
##	[486]	alive	alive	alive	alive	alive
##	[491]	alive	alive	alive	alive	alive
##	[496]	alive	dead	dead	dead	dead
##	[501]	dead	dead	dead	dead	dead
##	[506]	dead	dead	dead	dead	dead
##	[511]	dead	dead	dead	dead	dead
##	[516]	alive	alive	alive	alive	alive
##	[521]	alive	dead	dead	dead	dead
##	[526]	dead	dead	dead	dead	dead
##	[531]	dead	dead	dead	dead	dead
##	[536]	dead	dead	dead	dead	dead
##	[541]	dead	dead	dead	dead	alive
##	[546]	alive	alive	alive	alive	alive
##	[551]	alive	alive	alive	alive	alive
##	[556]	alive	alive	alive	dead	dead
##	[561]	dead	dead	dead	dead	dead
##	[566]	dead	dead	dead	dead	dead
##	[571]	dead	dead	dead	dead	dead
##	[576]	alive	alive	alive	alive	alive
##	[581]	alive	alive	alive	alive	alive
##	[586]	alive	alive	alive	alive	alive
##	[591]	alive	alive	alive	alive	alive
##	[596]	alive	alive	alive	alive	alive
##	[601]	alive	alive	alive	alive	alive
##	[606]	alive	alive	dead	dead	dead
##	[611]	dead	dead	dead	dead	dead
##	[616]	dead	dead	dead	dead	dead
##	[621]	dead	dead	dead	alive	alive
##	[626]	alive	alive	alive	alive	alive
##	[631]	alive	alive	alive	alive	dead
##	[636]	dead	dead	dead	dead	dead
##	[641]	dead	dead	dead	dead	dead
##	[646]	dead	dead	dead	dead	dead
##	[651]	dead	dead	dead	dead	dead
##	[656]	dead	dead	dead	alive	alive
##	[661]	alive	alive	alive	alive	alive
##	[666]	alive	alive	alive	alive	alive
##	[671]	alive	alive	alive	alive	alive
##	[676]	alive	dead	dead	dead	dead
##	[681]	dead	dead	dead	dead	dead
##	[686]	dead	dead	dead	dead	dead
##	[691]	dead	dead	dead	dead	dead
##	[696]	dead	dead	dead	dead	dead
##	[701]	dead	dead	dead	dead	dead
##	[706]	dead	dead	dead	dead	dead
##	[711]	dead	alive	alive	alive	alive
##	[716]	alive	alive	alive	alive	alive
##	[721]	alive	alive	alive	alive	alive

##	[726]	alive	dead	dead	dead	dead
##	[731]	alive	alive	alive	alive	alive
##	[736]	alive	alive	alive	alive	alive
##	[741]	alive	alive	alive	alive	dead
##	[746]	dead	dead	dead	alive	alive
##	[751]	alive	alive	alive	alive	alive
##	[756]	alive	alive	alive	alive	alive
##	[761]	alive	alive	alive	alive	alive
##	[766]	alive	alive	alive	alive	alive
##	[771]	alive	alive	alive	alive	alive
##	[776]	dead	dead	dead	dead	alive
##	[781]	alive	alive	alive	alive	alive
##	[786]	alive	alive	alive	alive	alive
##	[791]	alive	alive	alive	alive	alive
##	[796]	alive	alive	alive	alive	alive
##	[801]	alive	alive	alive	dead	dead
##	[806]	dead	dead	dead	dead	dead
##	[811]	dead	dead	dead	dead	transplanted
##	[816]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[821]	transplanted	transplanted	transplanted	transplanted	dead
##	[826]	dead	dead	dead	dead	alive
##	[831]	alive	alive	alive	alive	alive
##	[836]	alive	alive	alive	alive	alive
##	[841]	dead	dead	dead	dead	dead
##	[846]	dead	dead	dead	alive	alive
##	[851]	alive	alive	alive	alive	alive
##	[856]	alive	alive	alive	dead	dead
##	[861]	dead	dead	dead	dead	dead
##	[866]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[871]	transplanted	transplanted	transplanted	dead	dead
##	[876]	dead	dead	dead	dead	dead
##	[881]	dead	dead	dead	dead	dead
##	[886]	dead	dead	dead	dead	dead
##	[891]	dead	dead	dead	dead	dead
##	[896]	dead	dead	dead	dead	dead
##	[901]	alive	alive	alive	alive	alive
##	[906]	alive	alive	alive	alive	alive
##	[911]	alive	alive	alive	alive	alive
##	[916]	alive	alive	alive	alive	alive
##	[921]	alive	alive	alive	dead	dead
##	[926]	dead	dead	dead	dead	dead
##	[931]	dead	dead	dead	dead	dead
##	[936]	dead	dead	transplanted	transplanted	transplanted
##	[941]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[946]	dead	alive	alive	alive	alive
##	[951]	alive	alive	alive	alive	alive
##	[956]	alive	dead	dead	dead	transplanted
##	[961]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[966]	transplanted	transplanted	transplanted	dead	dead
##	[971]	dead	dead	dead	alive	alive
##	[976]	alive	alive	alive	alive	alive
##	[981]	alive	alive	alive	alive	dead
##	[986]	dead	dead	dead	dead	alive
##	[991]	alive	alive	alive	alive	alive

##	[996]	alive	alive	alive	alive	alive
##	[1001]	alive	dead	dead	dead	dead
##	[1006]	dead	dead	dead	dead	dead
##	[1011]	dead	alive	alive	alive	alive
##	[1016]	alive	alive	dead	dead	dead
##	[1021]	dead	dead	dead	dead	dead
##	[1026]	dead	alive	alive	alive	alive
##	[1031]	alive	alive	alive	alive	alive
##	[1036]	alive	alive	alive	alive	alive
##	[1041]	alive	alive	alive	alive	alive
##	[1046]	alive	alive	alive	alive	alive
##	[1051]	alive	alive	alive	alive	alive
##	[1056]	alive	alive	alive	alive	alive
##	[1061]	alive	alive	alive	alive	alive
##	[1066]	alive	alive	alive	alive	dead
##	[1071]	dead	dead	dead	dead	dead
##	[1076]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1081]	transplanted	alive	alive	alive	alive
##	[1086]	alive	alive	alive	alive	alive
##	[1091]	alive	alive	alive	alive	alive
##	[1096]	alive	dead	dead	dead	dead
##	[1101]	dead	dead	dead	dead	dead
##	[1106]	dead	dead	dead	dead	dead
##	[1111]	dead	dead	alive	alive	alive
##	[1116]	alive	dead	dead	dead	dead
##	[1121]	dead	dead	dead	dead	dead
##	[1126]	dead	dead	dead	dead	dead
##	[1131]	dead	dead	dead	dead	dead
##	[1136]	dead	dead	alive	alive	alive
##	[1141]	alive	alive	alive	alive	alive
##	[1146]	alive	alive	alive	alive	alive
##	[1151]	alive	alive	alive	alive	alive
##	[1156]	alive	alive	dead	dead	dead
##	[1161]	alive	alive	alive	alive	alive
##	[1166]	alive	alive	alive	alive	alive
##	[1171]	dead	alive	alive	alive	dead
##	[1176]	dead	dead	dead	alive	alive
##	[1181]	alive	alive	alive	alive	alive
##	[1186]	alive	alive	alive	alive	transplanted
##	[1191]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1196]	transplanted	transplanted	transplanted	dead	dead
##	[1201]	dead	dead	alive	alive	alive
##	[1206]	alive	alive	alive	alive	alive
##	[1211]	alive	alive	alive	alive	alive
##	[1216]	alive	alive	alive	alive	alive
##	[1221]	alive	dead	dead	dead	dead
##	[1226]	dead	dead	dead	dead	dead
##	[1231]	dead	alive	alive	alive	alive
##	[1236]	alive	alive	alive	alive	dead
##	[1241]	dead	dead	dead	dead	dead
##	[1246]	alive	alive	alive	alive	alive
##	[1251]	alive	alive	alive	alive	alive
##	[1256]	dead	dead	dead	dead	dead
##	[1261]	alive	alive	alive	alive	alive

##	[1266]	alive	alive	alive	alive	alive
##	[1271]	alive	alive	alive	alive	alive
##	[1276]	alive	alive	alive	alive	alive
##	[1281]	alive	alive	alive	alive	alive
##	[1286]	alive	alive	alive	alive	alive
##	[1291]	alive	alive	alive	alive	alive
##	[1296]	alive	alive	alive	alive	alive
##	[1301]	alive	alive	alive	alive	alive
##	[1306]	alive	alive	dead	dead	dead
##	[1311]	dead	dead	dead	alive	alive
##	[1316]	alive	alive	alive	alive	alive
##	[1321]	alive	alive	alive	alive	alive
##	[1326]	alive	alive	alive	alive	alive
##	[1331]	alive	alive	alive	alive	alive
##	[1336]	alive	alive	alive	alive	transplanted
##	[1341]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1346]	transplanted	transplanted	dead	dead	dead
##	[1351]	dead	dead	dead	dead	dead
##	[1356]	dead	dead	dead	dead	dead
##	[1361]	dead	dead	dead	dead	dead
##	[1366]	alive	alive	alive	alive	alive
##	[1371]	alive	alive	alive	alive	alive
##	[1376]	alive	alive	alive	alive	alive
##	[1381]	alive	alive	dead	alive	alive
##	[1386]	alive	alive	alive	alive	alive
##	[1391]	alive	alive	alive	dead	dead
##	[1396]	dead	dead	alive	alive	alive
##	[1401]	alive	alive	alive	dead	dead
##	[1406]	dead	dead	dead	dead	dead
##	[1411]	dead	alive	alive	alive	alive
##	[1416]	alive	alive	alive	alive	alive
##	[1421]	alive	alive	alive	alive	alive
##	[1426]	alive	alive	alive	alive	alive
##	[1431]	alive	transplanted	transplanted	transplanted	transplanted
##	[1436]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1441]	transplanted	transplanted	alive	alive	alive
##	[1446]	alive	alive	alive	alive	alive
##	[1451]	alive	alive	alive	alive	alive
##	[1456]	alive	alive	alive	alive	alive
##	[1461]	alive	alive	alive	dead	dead
##	[1466]	dead	dead	dead	dead	dead
##	[1471]	dead	dead	dead	dead	dead
##	[1476]	dead	alive	alive	alive	alive
##	[1481]	alive	alive	alive	alive	alive
##	[1486]	alive	alive	alive	alive	alive
##	[1491]	alive	dead	dead	dead	alive
##	[1496]	alive	alive	alive	alive	alive
##	[1501]	alive	alive	alive	alive	alive
##	[1506]	alive	alive	alive	alive	alive
##	[1511]	alive	alive	alive	alive	alive
##	[1516]	alive	alive	alive	alive	alive
##	[1521]	alive	alive	dead	dead	dead
##	[1526]	dead	dead	dead	dead	dead
##	[1531]	alive	alive	alive	alive	alive



##	[1536]	alive	alive	dead	dead	dead
##	[1541]	dead	alive	alive	alive	alive
##	[1546]	alive	alive	alive	alive	alive
##	[1551]	alive	alive	alive	alive	alive
##	[1556]	alive	alive	dead	dead	dead
##	[1561]	dead	dead	alive	alive	alive
##	[1566]	alive	alive	alive	alive	alive
##	[1571]	dead	dead	dead	dead	dead
##	[1576]	alive	alive	alive	alive	alive
##	[1581]	alive	alive	alive	alive	alive
##	[1586]	alive	alive	alive	alive	alive
##	[1591]	alive	alive	alive	alive	alive
##	[1596]	alive	alive	alive	alive	alive
##	[1601]	alive	dead	dead	dead	dead
##	[1606]	alive	alive	alive	alive	dead
##	[1611]	dead	dead	alive	alive	alive
##	[1616]	alive	dead	dead	dead	dead
##	[1621]	alive	alive	alive	alive	alive
##	[1626]	alive	alive	transplanted	transplanted	alive
##	[1631]	alive	transplanted	transplanted	dead	dead
##	[1636]	dead	dead	dead	dead	alive
##	[1641]	alive	alive	alive	alive	alive
##	[1646]	alive	alive	transplanted	transplanted	transplanted
##	[1651]	transplanted	dead	dead	dead	dead
##	[1656]	dead	dead	dead	dead	dead
##	[1661]	dead	dead	dead	dead	dead
##	[1666]	alive	alive	transplanted	transplanted	transplanted
##	[1671]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1676]	transplanted	transplanted	alive	alive	alive
##	[1681]	alive	alive	alive	alive	alive
##	[1686]	alive	alive	alive	transplanted	transplanted
##	[1691]	alive	alive	alive	alive	alive
##	[1696]	alive	alive	alive	alive	alive
##	[1701]	alive	alive	transplanted	transplanted	transplanted
##	[1706]	transplanted	alive	alive	alive	alive
##	[1711]	alive	alive	alive	alive	alive
##	[1716]	alive	alive	alive	alive	alive
##	[1721]	alive	alive	alive	alive	alive
##	[1726]	alive	alive	alive	alive	alive
##	[1731]	alive	alive	alive	alive	dead
##	[1736]	alive	alive	alive	alive	alive
##	[1741]	alive	transplanted	transplanted	transplanted	transplanted
##	[1746]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1751]	transplanted	transplanted	transplanted	transplanted	transplanted
##	[1756]	transplanted	transplanted	alive	alive	alive
##	[1761]	alive	alive	alive	alive	dead
##	[1766]	dead	dead	dead	dead	dead
##	[1771]	dead	dead	dead	dead	transplanted
##	[1776]	transplanted	transplanted	alive	alive	alive
##	[1781]	alive	alive	alive	alive	alive
##	[1786]	alive	alive	alive	alive	alive
##	[1791]	alive	transplanted	transplanted	transplanted	transplanted
##	[1796]	transplanted	transplanted	transplanted	transplanted	alive
##	[1801]	alive	alive	alive	alive	alive

```

## [1806] alive      alive      alive      alive      alive
## [1811] transplanted transplanted transplanted transplanted transplanted
## [1816] alive      alive      alive      alive      alive
## [1821] alive      alive      alive      alive      alive
## [1826] alive      alive      alive      alive      dead
## [1831] transplanted transplanted transplanted transplanted alive
## [1836] alive      alive      alive      alive      alive
## [1841] alive      alive      alive      alive      alive
## [1846] alive      alive      alive      alive      alive
## [1851] alive      alive      transplanted transplanted dead
## [1856] dead       dead       dead       alive      alive
## [1861] alive      alive      alive      alive      alive
## [1866] transplanted transplanted transplanted transplanted transplanted
## [1871] dead       dead       dead       alive      alive
## [1876] alive      alive      alive      alive      alive
## [1881] alive      alive      transplanted transplanted alive
## [1886] alive      alive      transplanted transplanted transplanted
## [1891] alive      alive      alive      alive      dead
## [1896] dead       alive      alive      alive      alive
## [1901] alive      alive      alive      alive      dead
## [1906] dead       dead       dead       alive      alive
## [1911] alive      alive      alive      alive      alive
## [1916] alive      alive      alive      alive      alive
## [1921] alive      alive      alive      alive      alive
## [1926] alive      alive      alive      alive      alive
## [1931] alive      alive      alive      alive      alive
## [1936] alive      alive      alive      alive      alive
## [1941] alive      alive      alive      alive      alive
## Levels: alive transplanted dead

## Print the vector sex.
pbc2.id$sex

```

```

## [1] female female male  female female female female female female female
## [11] female female female male  female female female female female female
## [21] male  female female male  female female female female female female
## [31] female female female female female female female female female female female
## [41] female female female female female female female female male  female female
## [51] female male  female female male  female female male  female female
## [61] male  female female female female male  female female female female female
## [71] female female female female female female female female female female male
## [81] female female female female female female female female female female male
## [91] female female female female female female female male  female male  male
## [101] female female female female female female female female female female female
## [111] female female female male  female female female female female female male
## [121] male  female female male  female female female female female female female
## [131] female female male  female female female female male  female female
## [141] female female female female female female female female female male  female
## [151] female male  female male  female female female female male  female
## [161] female female female female male  female male  female female female
## [171] female female female female female female female female female female female
## [181] female female female female female female female female female female female
## [191] female female female female female female female female female female female
## [201] female female female female female female female female female female male
## [211] female female female female female female female female female female female

```

```

# Create a new variable, sex, with the values of the variable sex
# from the first data frame, pbc2, and assign it to the variable
# sex in the second data frame, pbc3.
pbc3$sex = pbc2$sex

```

19

[illegible]

[illegible]

[illegible]

```
## [1828] female female female female female female female female female
## [1837] female female female female female female female female female
## [1846] female female female female female female female female female
## [1855] male male male male female female female female female
## [1864] female female female female female female female male male
## [1873] male female female male male male male male male
## [1882] male male male female female female male male male
## [1891] female female female female female female female female female
## [1900] female female female female female female female female female
## [1909] female female female female female female female female female
## [1918] female female female female female female female female female
## [1927] female female female female female female female female female
## [1936] female female female female female female female female female
## [1945] female
## Levels: male female
```

```
pb2.id[["sex"]]
```

```
## [1] female female male female female female female female female female
## [11] female female female male female female female female female female
## [21] male female female male female female female female female female
## [31] female female female female female female female female female female
## [41] female female female female female female female male female female
## [51] female male female female male female female male female female
## [61] male female female female female male female female female female
## [71] female female female female female female female female female male
## [81] female female female female female female female female female male
## [91] female female female female female female male female male male
## [101] female female female female female female female female female female
## [111] female female female male female female female female female male
## [121] male female female male female female female female female female
## [131] female female male female female female female male female female
## [141] female female female female female female female female male female
## [151] female male female male female female female female male female
## [161] female female female female male female male female female female
## [171] female female female female female female female female female female
## [181] female female female female female female female female female female
## [191] female female female female female female female female female female
## [201] female female female female female female female female female male
## [211] female female female female female female female female female female
## [221] female female female female female female male female female female
## [231] female female female female female female female female female female
## [241] female female female female female female female female female female
## [251] female female male female female female female female female male
## [261] female female female female female female female female female female
## [271] female female female female female female female female female female
## [281] female female female female female female female female male female
## [291] female male female male male female male female female female
## [301] female female female female female female female female female female
## [311] female female
## Levels: male female
```

```
pb2[["sex"]]
```

```
## [1] female female female female female female female female female
```

[illegible]



[illegible]

[illegible]

[illegible]

```
## Levels: male female
```

```
## Select the serum bilirubin levels for all females.
```

```
pb2.id$serBilir[pb2.id$sex == "female"]
```

```
##      [1] 14.5  1.1  1.8  3.4  0.8  1.0  0.3  3.2 12.6  1.4  3.6  0.7  0.8  0.7
##     [15]  2.7 11.4  0.7  5.1  3.4 17.4  0.7  5.2 21.6 17.2  0.7  3.6  4.7  1.8
##     [29]  0.8  0.8  1.2  0.3  7.1  3.3  0.7  1.3  6.8  2.1  1.1  3.3  0.6  5.7
##     [43]  0.5  0.8  1.1  0.8  2.6  1.3  1.1  2.3  0.8  0.9  1.3 22.5  2.1  1.2
##     [57]  1.1  0.7 20.0  0.6  1.2  0.5  0.7  8.4 17.1 12.2  6.6  6.3  0.8  2.0
##     [71]  4.5  1.3  0.4  2.1  5.0  1.1  0.6  2.0  5.0  1.4  1.3  3.2 17.4  1.0
##     [85]  1.0  0.9  0.9  2.5  1.1  1.1  2.1  0.6  0.4  0.5  1.9  5.5  2.0  6.7
##     [99]  0.7  3.0  6.5  3.5  0.6  0.6  5.1  1.3  1.2  0.5 16.2  0.9 17.4  2.8
##    [113]  1.9  0.7  0.4  0.8  1.1  1.1  1.1  0.9  1.0  2.9 28.0  0.7  1.2  1.2
##    [127]  7.2  1.0  0.9  0.5  0.6 25.5  0.6  3.4  0.6  2.3  3.2  0.3  8.5  5.7
##    [141]  0.4  1.3  1.2  0.5  1.3  3.0  0.5  0.8  3.2  0.9  0.6  1.8  4.7  1.4
##    [155]  0.6  0.5 11.0  0.8  2.0 14.0  0.7  1.3  2.3 24.5  0.9 10.8  1.5  3.7
##    [169]  1.4  0.6  0.7  2.1  4.7  0.6  0.5  0.5  0.7  2.5  0.6  0.6  3.9  0.7
##    [183]  1.3  1.2  0.5  0.9  5.9  0.5 11.4  0.5  1.6  3.8  0.9  4.5 14.1  1.0
##    [197]  0.7  0.5  0.7  4.5  3.3  3.4  0.4  0.9  0.9 13.0  1.5  1.6  0.6  0.8
##    [211]  0.4  4.4  1.9  8.0  3.9  0.6  2.1  6.1  0.8  1.3  0.6  0.5  1.1  3.1
##    [225]  0.7  1.1  0.5  1.1  3.1  3.2  2.8  1.1  3.4  3.5  0.5  6.6  6.4  3.6
##    [239]  1.0  1.0  0.5  2.2  1.6  2.2  1.0  1.0  5.6  0.5  1.6 17.9  1.3  1.1
##    [253]  1.3  0.8  2.0  6.4  8.7  1.4  3.2  8.5  0.8  1.1  2.4  5.2  1.0  0.7
##    [267]  1.0  0.5  2.9  0.6  0.8  0.4  0.4  1.7  2.0  6.4
```

```
pb2$serBilir[pb2$sex == "female"]
```

```
##      [1] 14.5 21.3  1.1  0.8  1.0  1.9  2.6  3.6  4.2  3.6  4.6  1.8  1.6
##     [14]  1.7  3.2  3.7  4.0  5.3  3.4  1.9  2.5  5.7  5.2 19.0  0.8  0.8
##     [27]  0.9  0.7  0.6  0.7  1.0  1.2  0.8  1.0  1.2  1.2  1.4  0.3  0.5
##     [40]  0.7  0.7  0.9  1.3  1.8  5.4  3.2  7.0  4.2 13.5 12.0 16.2 14.8
##     [53] 12.6  1.4  1.2  1.5  2.2  2.0  2.1  3.4  3.2  3.6  4.6  3.7  9.6
##     [66]  3.6 10.0  0.7  0.6  0.8  1.2  1.0  1.1  0.9  1.1  1.6  1.1  1.9
##     [79]  1.2  0.8  0.4  0.8  0.7  0.7  1.2  2.1  3.3  3.7  6.0 11.4  0.7
##     [92]  0.5  0.6  0.7  0.6  0.6  0.8  0.8  0.6  0.8  0.7  0.9  0.9  2.7
##    [105]  4.5 13.6 11.4  0.7  0.5  0.5  0.5  0.3  0.4  0.5  0.5  0.5  0.5
##    [118]  0.5  0.8  0.8  0.9  0.8  5.1 15.3 11.1 32.0  3.4  2.1  2.4 17.4
##    [131] 19.5  0.7  0.5  0.6  0.5  0.7  0.4  0.5  0.4  0.5  0.6  0.5  0.7
##    [144]  5.2  6.6  5.8  6.0  9.0 16.2 21.6 17.2 15.0 21.3  0.7  0.7  0.6
##    [157]  0.5  0.5  0.6  0.8  1.0  2.2  1.4  3.6 15.2 36.0  4.7  2.9  0.9
##    [170]  3.1  3.2  2.7  2.2  1.8  1.9  2.8  6.0 12.0  1.8  1.9  1.6  1.3
##    [183]  1.4  1.2  1.2  1.0  1.0  0.7  0.7  0.7  0.8  0.8  0.5  0.9  0.8
##    [196]  1.1  0.8  0.8  2.1  1.3  1.2  1.0  1.6  1.3  0.8  0.8  0.7  0.5
##    [209]  0.9  0.8  1.2  1.4  1.2  1.2  0.3  1.2  1.1  1.0  1.2  1.5  3.5
##    [222]  4.2  0.3  0.5  0.6  0.5  0.6  0.8  0.8  0.6  0.5  0.3  0.7  7.1
##    [235] 13.5  3.3  5.2  3.3  1.6  1.6  1.5  2.7  2.5  4.3  5.6  0.7  0.4
##    [248]  0.7  0.5  0.6  1.0  4.3 10.5  1.3  1.2  0.8  3.2  4.8  5.0  8.0
##    [261]  7.6  9.7  7.4  4.7 12.0  5.6  7.3 18.0  6.8  2.1  4.8 16.2  2.1
##    [274]  2.1  2.4  2.1  3.0  2.2  5.2  4.4  6.1  5.8  9.3 14.2 12.2 13.8
##    [287] 10.5 13.0  1.1  0.8  0.6  0.8  0.6  0.7  0.6  0.7  0.8  0.7  0.9
##    [300]  1.1  1.3  1.1  1.1  3.3  3.9  2.4  2.5  2.6  2.9  3.3  2.9  4.8
##    [313] 10.0 29.4  0.6  0.6  0.6  0.6  0.5  0.5  0.6  0.6  0.8  5.7  6.1
##    [326]  3.7  2.2  3.0  5.7  9.9 16.5  0.5  0.5  0.6  0.6  0.5  0.5  0.9
##    [339]  0.8  0.8  4.5  3.1  1.1  1.1  1.8  1.9  2.2  4.1  2.9  3.9  5.8
```

##	[352]	0.8	0.7	0.8	3.3	9.5	11.7	16.2	20.1	15.8	16.9	2.6	3.0	12.6
##	[365]	1.3	1.5	2.6	3.4	18.6	1.1	3.3	5.3	9.0	11.1	41.0	2.3	0.9
##	[378]	1.4	1.1	1.5	1.8	2.6	3.1	4.5	5.4	15.6	0.8	1.2	1.8	4.2
##	[391]	12.0	13.5	22.7	0.9	0.9	0.7	0.9	0.8	0.8	0.7	0.8	0.6	0.7
##	[404]	0.8	0.9	0.7	1.3	2.0	1.4	1.8	2.2	2.6	2.8	2.0	3.1	6.8
##	[417]	22.5	18.5	17.0	2.1	1.9	1.6	1.8	6.7	16.5	1.2	1.1	1.4	1.2
##	[430]	1.7	1.4	1.1	0.9	1.0	0.8	1.3	1.3	1.4	1.7	3.0	4.7	0.7
##	[443]	0.9	0.6	0.5	0.4	0.6	0.7	1.0	1.0	1.3	1.9	3.4	4.0	5.6
##	[456]	20.0	30.0	32.0	21.9	0.6	0.7	0.6	0.8	0.6	0.8	1.2	1.2	1.9
##	[469]	4.7	4.0	10.5	16.6	1.2	1.1	2.7	2.4	2.0	1.5	1.6	1.7	1.6
##	[482]	2.0	2.8	0.5	1.3	0.7	0.9	1.1	0.7	0.7	0.7	0.4	0.6	0.5
##	[495]	0.5	0.7	0.6	0.5	0.5	0.5	0.6	0.4	0.5	0.5	8.4	2.8	2.8
##	[508]	18.0	17.1	4.7	5.4	5.9	6.6	12.2	6.6	13.2	6.3	3.4	3.5	11.0
##	[521]	0.8	0.6	0.6	1.3	1.0	0.9	1.3	1.5	1.6	2.1	2.1	2.0	2.7
##	[534]	1.3	1.9	4.3	4.1	5.5	8.1	8.1	10.2	4.5	1.1	0.4	0.4	0.5
##	[547]	0.5	0.7	0.6	0.5	0.7	1.3	1.3	1.3	1.4	1.0	1.1	1.2	1.1
##	[560]	1.4	1.1	1.2	1.3	1.4	1.3	1.4	0.4	0.6	0.4	2.1	11.4	4.5
##	[573]	1.0	4.3	3.6	6.9	4.5	9.0	6.8	14.7	5.0	1.1	1.2	0.6	0.4
##	[586]	0.4	0.9	2.0	1.1	8.7	6.5	5.0	4.3	4.2	1.4	1.3	2.4	4.0
##	[599]	3.1	8.0	15.5	19.7	30.0	31.0	37.8	27.8	27.7	24.3	24.6	22.2	3.2
##	[612]	6.2	9.8	17.4	1.0	0.6	0.7	0.6	0.5	0.6	0.9	0.6	0.8	0.6
##	[625]	0.8	0.7	0.8	0.7	1.0	0.9	1.4	0.8	0.8	0.6	0.6	0.7	0.5
##	[638]	0.5	0.8	0.5	0.4	0.6	0.9	1.1	0.9	0.7	0.6	0.7	0.6	0.6
##	[651]	0.6	0.7	0.6	0.6	0.9	1.0	0.9	0.7	0.9	0.8	0.9	0.8	1.0
##	[664]	1.0	1.1	0.7	2.5	1.1	0.9	0.9	1.0	3.2	7.2	8.5	8.0	11.1
##	[677]	11.0	1.1	1.1	1.7	1.4	5.5	11.4	8.4	12.4	9.9	15.9	2.1	1.1
##	[690]	1.5	1.4	2.0	0.6	0.5	0.6	0.5	0.6	0.5	0.6	0.5	0.8	0.7
##	[703]	0.7	0.4	0.3	0.5	0.5	0.3	0.4	0.5	0.5	0.5	0.3	0.5	0.5
##	[716]	0.3	0.4	0.5	0.5	0.5	0.5	1.9	1.3	1.5	1.8	3.5	3.3	2.5
##	[729]	5.5	7.2	6.3	6.7	20.0	16.4	18.3	20.6	2.0	2.7	3.2	3.3	3.6
##	[742]	4.3	4.9	3.8	4.4	3.6	10.5	6.7	5.2	7.2	13.5	26.0	0.7	0.6
##	[755]	0.6	0.6	0.5	0.8	0.8	0.7	1.1	1.0	0.8	1.1	3.0	3.3	1.4
##	[768]	0.7	0.9	0.9	0.9	0.9	1.2	0.8	1.0	6.5	17.4	15.0	19.5	14.5
##	[781]	3.5	3.7	3.4	4.2	4.8	5.8	12.0	0.6	2.3	0.6	0.4	0.6	0.4
##	[794]	0.7	0.5	0.4	0.6	0.7	0.6	5.1	4.7	1.3	2.4	2.2	2.4	3.4
##	[807]	4.0	3.7	13.4	13.4	1.2	0.9	1.6	2.3	10.8	0.5	0.5	0.9	1.1
##	[820]	1.1	1.4	1.1	2.9	2.2	2.5	2.3	16.2	4.5	18.5	16.5	16.0	0.9
##	[833]	0.9	0.7	0.7	0.7	0.9	0.8	1.4	1.0	0.8	1.0	1.0	17.4	13.2
##	[846]	13.2	16.5	14.2	27.2	2.8	4.5	5.6	16.2	1.9	1.2	1.5	1.0	1.2
##	[859]	1.4	0.7	1.0	0.8	0.6	0.5	0.7	0.7	0.8	1.2	1.9	3.7	5.3
##	[872]	0.4	0.6	0.6	0.5	0.5	0.4	0.3	0.5	0.5	0.5	0.8	1.2	1.3
##	[885]	1.1	1.3	1.5	1.4	1.3	1.2	1.1	1.2	0.8	0.9	0.8	0.7	0.6
##	[898]	0.7	0.6	0.8	0.7	0.6	1.1	0.8	0.8	1.3	1.9	4.5	1.1	0.5
##	[911]	0.6	0.5	0.6	0.5	0.5	0.5	0.8	0.6	0.5	0.9	0.9	0.7	0.7
##	[924]	1.0	1.0	1.6	2.3	3.5	9.8	14.8	17.4	23.4	2.9	4.8	4.5	28.0
##	[937]	13.6	17.5	14.1	0.7	0.7	0.4	0.5	1.2	0.8	1.5	0.9	1.6	1.8
##	[950]	5.2	1.2	1.2	1.1	1.1	0.9	7.2	5.4	4.4	3.3	6.4	9.0	1.0
##	[963]	1.0	0.9	1.1	1.1	1.1	1.0	1.5	1.0	0.9	0.9	0.7	0.8	1.1
##	[976]	1.6	2.1	3.2	2.9	3.0	3.4	0.5	0.6	0.3	0.7	0.4	0.3	0.4
##	[989]	0.6	0.4	0.4	0.6	0.5	0.6	25.5	22.2	22.5	24.8	0.6	1.1	0.9
##	[1002]	0.8	0.9	0.7	0.7	0.7	0.7	0.7	0.9	3.4	4.5	3.0	11.1	12.0
##	[1015]	12.4	11.4	13.5	11.7	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.8	2.3
##	[1028]	2.9	5.0	3.8	6.9	5.4	3.3	3.7	2.0	3.0	3.3	3.2	0.3	0.5
##	[1041]	0.6	8.5	5.7	1.3	1.3	1.0	0.7	1.4	3.1	3.2	0.4	0.7	0.5

```

## [1054] 0.4 0.5 0.6 0.9 0.8 0.7 0.9 1.3 1.2 1.2 1.6 2.2 1.2
## [1067] 0.5 0.6 0.5 0.6 0.4 0.7 1.0 0.7 0.6 0.7 1.3 1.2 1.5
## [1080] 1.2 1.2 1.1 1.5 3.0 1.9 1.8 1.7 1.9 2.1 2.4 3.5 4.2
## [1093] 0.5 0.4 0.8 0.6 0.8 1.4 1.5 0.9 1.0 1.6 0.8 0.6 0.9
## [1106] 0.9 1.0 0.8 1.0 0.8 0.8 1.1 3.2 1.8 1.7 2.8 3.0 4.4
## [1119] 0.9 0.6 0.6 0.7 0.7 0.9 0.7 1.8 1.1 1.6 4.7 5.3 5.9
## [1132] 4.3 6.7 6.3 8.6 10.9 9.9 12.5 1.4 0.6 0.8 0.6 0.5 0.6
## [1145] 0.5 0.5 0.8 2.1 2.4 2.3 5.0 14.5 11.0 16.0 7.0 10.2 15.5
## [1158] 0.8 0.9 1.4 2.0 4.2 2.0 2.0 2.1 2.6 14.0 4.5 13.6 40.0
## [1171] 0.7 0.8 0.6 0.7 0.7 0.7 0.5 0.4 1.3 0.8 0.8 0.8 0.7
## [1184] 2.3 2.0 1.9 2.2 24.5 0.9 0.7 0.7 0.3 0.7 0.8 0.8 0.9
## [1197] 1.0 1.3 10.8 10.0 14.9 11.7 1.5 1.6 2.0 1.8 1.1 3.7 1.4
## [1210] 1.0 1.3 1.8 1.9 2.8 2.7 2.5 0.6 0.5 0.4 0.6 0.6 1.0
## [1223] 0.8 1.0 0.9 0.7 0.2 0.6 0.9 0.7 0.7 1.0 1.0 2.1 2.1
## [1236] 3.0 4.7 3.8 2.6 2.3 2.2 1.7 1.4 2.2 2.5 2.5 24.6 0.6
## [1249] 0.7 0.7 0.6 0.9 0.7 0.7 1.4 3.6 1.4 0.5 0.6 0.5 0.5
## [1262] 0.6 0.5 0.5 0.5 0.8 0.9 0.7 0.7 0.8 0.8 1.3 1.9 5.8
## [1275] 8.2 12.0 2.5 2.7 2.6 3.8 5.4 0.6 0.5 0.5 0.5 0.6 0.6
## [1288] 0.5 0.5 0.6 0.5 0.6 0.6 0.6 0.5 0.8 3.9 3.4 12.0 0.7
## [1301] 0.5 1.3 0.9 1.9 3.3 4.6 3.6 5.0 3.8 1.2 0.8 1.2 0.8
## [1314] 0.5 0.7 0.5 0.4 0.9 1.1 2.0 4.0 5.9 23.8 20.1 22.5 0.5
## [1327] 0.7 0.6 0.9 3.1 6.8 7.6 11.4 17.5 17.5 34.6 0.5 0.6 0.5
## [1340] 0.5 0.4 0.5 0.6 0.4 0.6 0.5 1.6 1.2 1.5 1.8 3.0 2.1
## [1353] 3.8 5.1 7.1 8.5 8.5 0.9 0.2 2.2 1.5 1.3 2.0 1.0 0.8
## [1366] 4.5 2.8 4.6 7.3 14.1 1.0 1.0 1.2 2.4 4.5 4.7 8.6 5.1
## [1379] 0.7 0.5 1.0 0.7 0.5 1.0 1.1 1.3 2.0 0.5 0.8 0.7 0.6
## [1392] 0.9 0.8 0.7 0.7 0.8 0.7 0.1 0.7 0.9 4.5 4.8 6.2 3.3
## [1405] 2.2 3.0 2.1 3.4 4.4 8.1 14.8 0.4 0.2 0.5 0.9 0.9 0.9
## [1418] 0.7 13.0 14.5 1.5 0.8 1.6 1.9 0.6 0.5 0.4 0.8 0.7 1.7
## [1431] 0.4 0.3 0.2 0.3 0.5 0.4 0.5 0.5 4.4 4.2 6.0 14.2 1.9
## [1444] 1.5 4.9 14.5 8.1 11.1 15.2 11.8 8.0 11.0 3.9 5.0 7.4 8.8
## [1457] 0.6 0.4 2.1 1.5 2.8 2.9 9.6 3.1 6.1 5.6 5.9 1.5 0.8
## [1470] 0.8 0.7 0.8 0.6 0.6 0.6 1.0 1.3 1.0 0.8 0.6 0.9 0.5
## [1483] 1.1 1.1 1.2 3.1 7.1 13.0 17.1 0.7 0.5 0.4 0.4 0.4 0.4
## [1496] 1.1 0.6 0.8 1.1 1.3 1.8 0.5 0.5 0.3 1.1 1.0 1.1 1.0
## [1509] 1.8 1.7 1.9 2.1 3.1 4.2 2.5 8.5 8.0 3.2 1.3 1.8 2.2
## [1522] 2.4 2.3 2.8 1.2 1.0 1.1 1.2 1.1 2.3 1.4 3.4 8.4 9.3
## [1535] 10.6 3.5 2.9 2.8 9.8 0.5 0.8 0.5 0.7 0.6 0.6 1.2 6.6
## [1548] 6.4 6.8 3.6 10.0 15.1 17.9 13.5 15.8 23.8 1.0 1.1 1.0 1.0
## [1561] 1.4 1.1 1.1 1.4 1.9 2.4 2.9 0.5 0.4 0.7 0.5 0.4 0.3
## [1574] 2.2 4.2 4.2 1.6 2.8 3.8 5.8 6.5 2.2 3.1 2.9 2.3 1.0
## [1587] 0.9 1.0 1.3 1.7 1.5 2.3 5.6 3.7 5.4 7.1 12.6 0.5 0.6
## [1600] 0.6 0.6 0.7 0.6 0.6 1.6 1.2 1.0 1.2 0.9 1.3 1.1 17.9
## [1613] 1.3 1.1 1.2 1.3 1.1 1.2 1.0 1.3 1.3 1.2 1.3 1.4 1.3
## [1626] 1.2 1.4 0.8 2.0 2.6 6.4 5.4 4.4 4.0 8.7 9.0 1.4 0.9
## [1639] 0.6 1.4 1.9 1.8 2.2 3.2 5.9 11.0 11.4 12.0 8.5 5.7 0.8
## [1652] 0.8 0.8 1.1 1.3 2.0 2.4 5.2 17.7 1.0 0.8 0.9 0.7 0.6
## [1665] 0.8 0.7 1.0 1.0 0.9 1.7 2.1 0.5 2.9 1.5 2.6 2.0 2.0
## [1678] 0.6 0.5 0.8 0.8 1.2 2.8 4.2 0.4 0.5 0.8 0.9 1.1 0.4
## [1691] 0.6 0.3 0.5 0.6 1.7 1.7 2.2 1.4 1.8 2.0 1.5 1.9 0.6
## [1704] 6.4 5.5 7.4 16.3 23.4

```

```

## Select the age for male patients or patients that have serum bilirubin more than 3.
pbc2.id$age[pbc2.id$sex == "male" | pbc2.id$serBilir > 3]

```

```
## [1] 58.76684 70.07447 38.10645 42.50904 70.56182 59.13920 56.22331
## [8] 53.93166 59.95510 64.19067 56.27806 55.96868 44.52141 52.02607
## [15] 54.44092 44.94853 41.38649 41.55350 61.72927 36.62797 33.63542
## [22] 37.58351 45.80002 49.13755 50.54211 65.76498 44.57069 43.89990
## [29] 46.62961 46.45439 49.34016 51.92202 43.51933 51.94393 49.82751
## [36] 47.94656 67.41321 67.31190 52.75983 33.47662 45.60837 53.91797
## [43] 46.39141 71.89519 48.46950 51.47027 41.15376 51.23480 52.82828
## [50] 49.65776 48.85555 35.15223 67.90877 45.82193 52.89125 41.95050
## [57] 44.22845 62.64648 51.25123 52.28891 30.86464 61.80594 69.94305
## [64] 69.37904 59.41025 36.49381 45.76169 58.81886 43.41529 53.30741
## [71] 41.35637 60.95992 41.61100 42.56927 37.60815 35.79290 52.69412
## [78] 56.77363 29.55591 32.23360 61.29668 49.76454 41.17019 36.08039
## [85] 63.63213 46.26547 61.24466 58.95302 62.41649 34.61012 58.33698
## [92] 33.18366 41.37553 67.48987 44.83080 41.22221 78.44157 39.85872
## [99] 59.97153 74.52634 52.36557 44.14084 46.38320 70.90954 55.39645
## [106] 45.08542 32.50465 65.88545 58.64911 48.93768 67.57475 40.90187
## [113] 50.24641 57.19801 60.53828 35.35210 55.98784 58.17271 33.15354
```

```
pb2$age[pb2$sex == "male" & pb2$serBilir > 3]
```

```
## [1] 64.19067 64.19067 64.19067 64.19067 64.19067 44.52141 44.52141
## [8] 44.52141 44.52141 44.52141 44.52141 44.52141 44.52141 44.52141
## [15] 44.52141 44.52141 50.54211 50.54211 50.54211 50.54211 50.54211
## [22] 50.54211 50.54211 50.54211 65.76498 65.76498 65.76498 46.45439
## [29] 46.45439 46.45439 46.45439 46.45439 46.45439 67.41321 67.41321
## [36] 67.41321 67.41321 33.47662 33.47662 33.47662 33.47662 33.47662
## [43] 33.47662 71.89519 71.89519 51.47027 52.82828 52.82828 52.82828
## [50] 52.82828 35.15223 35.15223 35.15223 35.15223 35.15223 35.15223
## [57] 35.15223 35.15223 62.64648 62.64648 62.64648 62.64648 62.64648
## [64] 62.64648 51.25123 51.25123 51.25123 51.25123 51.25123 51.25123
## [71] 61.80594 61.80594 69.94305 69.94305 45.76169 53.30741 53.30741
## [78] 53.30741 53.30741 53.30741 49.76454 58.95302 58.95302 78.44157
## [85] 78.44157 78.44157 78.44157 78.44157 78.44157 78.44157 78.44157
## [92] 74.52634 67.57475 67.57475 50.24641 50.24641 50.24641 60.53828
## [99] 60.53828 60.53828 60.53828 60.53828 60.53828 60.53828
```

```
## Keep the first measurement per patient.
```

```
pb2.idNEW <- pb2[apply(row.names(pb2), pb2$id, tail, 1), ]
```