

Exercise 6B

- 1 The data will be presented as seven frequencies, with a specified total of 50, so there are six degrees of freedom.
- 2 From the tables $\chi_5^2(5\%) = 11.070$
- 3 a $\chi_5^2(5\%) = 11.070$
b $\chi_8^2(1\%) = 20.090$
c $\chi_{10}^2(10\%) = 23.209$
- 4 $\chi_{10}^2(5\%) = 18.307$
- 5 $\chi_8^2(10\%) = 13.362$
- 6 $\chi_8^2(99\%) = 1.646$, so $P(\chi_8^2 > 1.646) = 99\%$
So $y = 1.646$
- 7 $\chi_5^2(95\%) = 1.145$, so $P(\chi_5^2 > 1.145) = 95\%$
So $y = 1.145$
- 8 a $P(Y < y) = 1 - P(Y > y)$
So $P(Y < y) = 0.05 \Rightarrow P(Y > y) = 0.95$
 $\chi_{12}^2(95\%) = 5.226$, so $P(\chi_{12}^2 > 5.226) = 95\%$
 $y = 5.226$
b $P(Y < y) = 0.95 \Rightarrow P(Y > y) = 0.05$
 $\chi_{12}^2(5\%) = 21.026$, so $P(\chi_{12}^2 > 21.026) = 5\%$
 $y = 21.026$