

Test Stat

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

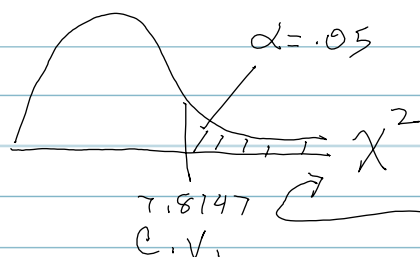
$$\chi^2 = 96.5619$$

	O	E	$\frac{(O-E)^2}{E}$
females {	186	167.4	2.0667
	661	585.0	9.8735
	173	242.9	20.1153
	16	40.7	14.9054
	140	158.6	2.1813
	478	554	10.4260
	300	230.1	21.2343
	63	38.3	15.7544
			96.5619

Critical Value : $r = \text{rows}$, $c = \text{column}$

$$\begin{aligned} d.f. &= (r-1)(c-1) \\ &= (4-1)(2-1) \\ &= 3 \cdot 1 \\ &= 3 \end{aligned}$$

Let's use $\alpha = .05$ and find the C.V. in Table A4.



$$\begin{array}{ccc} df & & \alpha = .05 \\ \downarrow & & \downarrow \\ (r-1)(c-1) & & \\ = 3 & \longrightarrow & 7.8147 \end{array}$$

T.S. $\chi^2 = 96.5619 \rightarrow \text{Reject } H_0 \text{ \& Support } H_1.$

H_1 : Drinking level is dependent on Gender.

The data strongly support the claim that drinking levels depend on gender.

(Explanatory variable : gender
 $\downarrow$ influence
 Response variable : drinking level)